Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

La
6

Land policy REVIEW

LIBRARY
CURRENT SERIAL RECORD
☆ MAR 28 1946 ☆
U. S. DEPARTMENT OF AGRICULTURE

Contents FOR SPRING 1946

Vol. IX, *No. 1*

		Page
FAO—An Interpretation	*Gove Hambidge*	3
High Production and Consumption .	*W. W. Cochrane*	8
Sparkplug for Rural Industries	*Gus Larson*	14
Central Valley Highlights	*Mary Montgomery*	18
Tenure Reform in Puerto Rico . .	*Marshall Harris*	22
African Agriculture.	*Herbert King*	27

Books . . . *Harold A. Vogel, Charl Ormond Williams, Jesse W. Tapp, Jane S. McKimmon, Everett E. Edwards, Gladys Baker, J. G. Riddle, Glenn Rule*

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS

Contributors

GOVE HAMBIDGE is the Director of Information of the new Food and Agriculture Organization. At the preliminary United Nations Conference on Food and Agriculture, held at Hot Springs, Va., in 1943, Mr. Hambidge was one of the secretaries of the Conference at Large. Immediately afterward he reported it in View from the Crow's-Nest, which was the leading article in our issue for Winter 1943.

WILLARD W. COCHRANE, one-time Littauer Fellow at Harvard, works in the fields of consumption and distribution in BAE.

GUS LARSON is resigning as Information Specialist in USDA to join the editorial staff of two national magazines and to open their new Washington office.

MARY MONTGOMERY, social scientist, is a member of the Western Regional staff of BAE with headquarters at Berkeley. Last year Dr. Montgomery left the Central Valley Project long enough to carry out a special assignment at the American Embassy in Mexico City.

MARSHALL HARRIS attended on invitation, as a land tenure specialist, the first Land Tenure Symposium, held in 1944, by the Anglo-American Caribbean Commission, established by the United States and British Governments. He recently finished analyzing and interpreting the papers and discussions, and the volume is now with the publishers.

HERBERT KING sends this article through the British Information Service.

JESSE W. TAPP, Vice President, Bank of America N. T. & S. A., in San Francisco, has served intermittently in various capacities in the USDA between 1920 and 1939, and is now a member of the Committee on Organization appointed by the Secretary of Agriculture; HAROLD A. VOGEL, Lieutenant, USNR, is an agricultural economist when a civilian; CHARL ORMOND WILLIAMS is Director of Field Service, National Education Association; JANE S. MCKIMMON worked with Dr. Knapp in early days and is now Assistant Director of Extension Work in North Carolina, and author of *When We're Green We Grow;* EVERETT E. EDWARDS is agricultural historian and J. G. RIDDLE is Information Specialist in BAE; GLADYS BAKER is author of the book, *The County Agent;* GLENN RULE is executive assistant to the Chief of SCS.

705584

LAND · POLICY · REVIEW

Land Policy Review is published quarterly by the Bureau of Agricultural Economics, U. S. Department of Agriculture, with approval of the Bureau of the Budget. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., 10 cents a single copy, 30 cents a year

FAO— An Interpretation

By GOVE HAMBIDGE. *Readers will welcome this interpretation by a well-known agricultural writer who has been working closely with this organization since the first preliminary meeting at Hot Springs more than two years ago.*

I HAVE READ that the ancient Egyptians used to prop up a mummy at their feasts. The silent guest had a sobering influence, reminding those present of the end that, soon or late, awaited them all. At the Quebec conference where the Food and Agriculture Organization was established during the last 2 weeks of October 1945 sat a more dreadful guest—the fact of the atomic bomb. Its presence seemed to pervade the proceedings; soon or late, the delegates knew, chaos awaits our civilization unless the new international organizations, of which FAO was the first to be launched, succeed in bringing about cooperation among governments and peoples for the building of a peaceful and orderly world.

Since this is a personal interpretation, I will venture the opinion that the appointment of the Scottish humanitarian, scientist, and farmer, Sir John Boyd Orr, as Director-General of FAO was in large part a recognition of the urgency of the task. The conference might have chosen a less forthright and colorful leader. Instead, it picked a man who for years fought for widespread application of the findings of modern science in agricultural production and nutrition as the means to eliminate hunger and want; who is an ardent, not a lukewarm, advocate of international cooperation; who, along with scientific hard-headedness and native bargaining sense, has a crusading spirit for the ideas on which FAO is based. If there had been no John Boyd Orr, to paraphrase an old saying, the conference would have had to invent one to give FAO the positive meaning and the vigorous start it needs.

The meeting was equally fortunate in its chairman, the Honorable L. B. Pearson, Canadian Ambassador to the United States and Chairman of the Interim Commission. "Mike" Pearson's progressive viewpoint, sense of humor, tact, skill in handling difficult situations, and driving energy were largely responsible for the success of the conference.

This Was Done

It was a hard-working conference. Before it was over:

Forty-two nations had joined FAO—Australia, Belgium, Bolivia, Brazil, Canada, Chile, China, Colombia, Cuba, Czechoslavakia, Denmark, the Dominican Republic, Ecuador, Egypt, France, Greece, Guatemala, Haiti, Honduras, Iceland, India, Iraq, Lebanon, Liberia, Luxembourg, Mexico, the Netherlands, New Zealand, Nicaragua, Norway, Panama, Paraguay, Peru, the Philippine Commonwealth, Poland, Syria, the Union of South Africa, the United Kingdom, the United States of America, Uruguay, Venezuela, Yugoslavia. Present as observers were the Union of Soviet Socialist Republics, the Byelorussian Soviet Socialist Republic, the Ukrainian Soviet Socialist Republic, and Argentina.

Sir John Orr had been made Director-General for the first 2 years.

An Executive Committee of 15 had been appointed: Mayer (France), Chairman; Tolley (U. S. A.), Vice-Chairman; Bajpai (India), Baker (Haiti), Barton (Canada), Belleza (Brazil), Enfield (U. K.), Fawcett (New Zealand), Fjelstad (Norway), Gallardo (Mexico), Haidari (Iraq), Mikolajczyk (Poland), Tsou (China), Viljoen (Union of South Africa), Wauters (Belgium).

Rules of procedure, financial regulations, and a tentative budget for the first year had been adopted.

Washington had been decided on as temporary headquarters and the seat of UNO as permanent headquarters.

Decisions had been made to absorb the International Institute of Agriculture and to work in the closest possible way with the United Nations Organizations whose functions are related to those of FAO.

Pending the decision of UNO on the language question, English and French had been adopted as the working languages after the first conference, and English, French, Spanish, Russian, and Chinese as the official languages.

Some 300 recommendations had been made by 6 technical committees—on nutrition and food management, agriculture, forestry and forest products, fisheries, marketing, and statistics—which met in more than 200 sessions during the 2 weeks.

These recommendations are of course the heart of the work. Their number and range show clearly how big a task FAO faces.

Practical Unanimity

The surprising thing in the committee meetings was the large amount of agreement and the comparatively small amount of disagreement. The conference was a melting pot of national interests representing extremely varied conditions, as the membership list indicates; of producer interests and consumer interests; and of the best thinking and knowledge of some of the world's ablest scientists and other experts in diverse fields. Out of the melting pot came what might fairly be called a consensus of informed world opinion on what needs to be done and can be done, in those basic areas of man's welfare represented by food, agriculture, forestry, and fisheries, to bring progress, order, and peace.

In Brief

The rationale of FAO can be summed up, it seems to me, in the following generalizations:

The most formidable enemy of progress, order, and peace in our time is the extreme unbalance in the world. Social forces seek a dynamic equlibrium just as do the forces of nature. Where they are violently out of balance in either case, there are profound disturbances. The physical seismograph records them as earthquakes; a social seismograph would record them as revolutions and wars.

The social forces are now violently out of balance. At least half, probably nearer two-thirds, of the world's people live in extreme poverty and ignorance; they have a very small quantity of life as measured by the years between birth and death and the amount of preventable disease; they cannot produce enough to eat or wear or house themselves decently, let alone such luxuries as automobiles and radios. The other half (or third), thanks largely to their command of modern scientific and technological developments, enjoy more wealth and educational advantages, a larger quantity of life, and a greater productive power than any comparable group in the world's history. Or to put it differently, half the world lives in the Middle Ages, the other half in the twentieth century.

No force can indefinitely maintain this extreme unbalance. Either one-half will be dragged down or the other half must be pulled up until the two are a great deal nearer an equal level. We, the fortunate half, do not want to be dragged down, whether by the slow process of choking on our own unused productive capacity—we can now produce much more than we have been able to use ourselves—or by the hasty one of atomic destruction. We want to be able to develop the far greater potentialities that we see in the future as science and technology continue to advance. The unfortunate half, on the other hand, are eager to pull themselves up to higher levels.

If the disparity cannot be corrected peacefully, they will try to correct it by violence. That, as I see it, is the fundamental reason for the present attempts to set up effective international organizations in the major fields of economic, social, and cultural activity. They are to be the means for peacefully achieving a dynamic equilibrium among nations—and as a corollary, among groups within nations—by an upward adjustment.

Two Aspects

Viewed in this light—and it is, of course, only one of many possible ways of looking at the world situation—the work of FAO will have two aspects. One will be helping the people of the relatively undeveloped countries to lift themselves to higher levels of productivity in agriculture, forestry, and fisheries and higher levels of living in food, clothing, housing, health, education. The other will be helping the people of the more highly developed countries to use their productive capacity with the assurance that they can prosper thereby, instead of having to throttle it down as they did during the defeatist era between the two wars. Needless to say, these two aspects of the work are not separate and independent. The productive capacity of the poorer half of the world must rise if it is to be able to purchase more of the products of the other half; and vice-versa, this rise, which is so vital to both groups, will be possible only if the wealthier half furnishes technical aid, credit, and perhaps special assistance in the form of supplies of certain basic products.

Next

The range and variety of the Quebec recommendations give some idea of the mass of complicated detail that will be involved in the carrying out of such an adjustment. In very broad terms, the process might be outlined like this:

For the undeveloped countries where subsistence agriculture is of primary importance and there is of course a wide range in the degree of development), FAO will have to find ways of pooling the world's technical knowledge and experience in nutrition, agricultural production, forestry, fisheries, agricultural education, credit, marketing, processing, transportation, and so on, and making the information available through technical missions, advisory committees, conferences, publication, and all other feasible means.

World Picture

But it is not enough to make information available. The organization will have to help governments apply it by assisting in the drawing up of concrete plans to meet specific problems, furnishing or obtaining technical aid in carrying the plans through, and acting as adviser on international loans needed for agricultural or closely related projects. FAO cannot, of course, order the internal reforms—for example, changes in antiquated land-tenure systems, or the abolition of burdensome terms on credit to farmers—that will be needed in some cases if substantial progress is to be made. It might do a good deal, however, to create an atmosphere of world public opinion favorable to such changes.

For the more highly developed countries where commercial agriculture is of primary importance, FAO will need first of all—and this work has already been started—to build up a world statistical picture, country by country and commodity by commodity, of production, supplies, and needs in relation to agricultural, forest, and fisheries products. Such a statistical picture, maintained and improved year by year, should clearly show the potential danger spots, whether for deficits or surpluses. It should also furnish the basis for rational policies, initiated internationally through FAO, designed to avoid the dangers. Such policies might include freer trade arrangements to open up markets; commodity pools for insurance against bad crop years; diversion of certain surpluses to areas of acute need through special international marketing arrangements; and, where this seemed clearly desirable, adjustments in production that would enable farmers who could not grow a certain product economically to shift to other, more advantageous types of farming.

The objectives of these policies would be threefold: to maintain a steady market for economical production of staple commodities by eliminating the violent fluctuations that play havoc under conditions of alternate oversupply and scarcity; to make economically possible the production of more of such foodstuffs as vegetables, fruits, milk, and meat, for which there is a large unfilled need in most countries; and thereby to encourage good farming and advance the interests alike of producers and consumers.

Stimulation

For both the developed and the undeveloped countries, FAO would offer services that would result in a stimulation of research in nutrition, agriculture, forestry, and fisheries all over the world, as well as a more rapid and complete exchange of information on research results and an expansion and strengthening of education in these fields.

Even more important, FAO would help to make effective the work of the other nascent international organizations concerned with military security, trade, industrial production, credit, labor, health, education, and culture. All of these agencies must be considered as a unit; it will be impossible to advance very far on one front if the others are neglected. World industry, for example, cannot prosper as it should if the two-thirds of the world's people who are farmers live for the most part in conditions of abject poverty; nor can there be security from war if the world's economic affairs are badly askew; nor a healthy economy under the constant threat of war.

Imperative

The undertaking is difficult; but if we can make such a program work, we can look forward to a period of robust expansion like that which occurred in the United States during the great era of development in transportation, industry, and agriculture—only this expansion will be on a world scale. Once the process gets well started, some of the difficulties will disappear; success develops a momentum of its own. We must make it work. For we now live in the same world with the atomic bomb. Unless we can match our mechanical inventiveness with social inventiveness, our civilization is likely to be buried in a dust finer and hotter than that which covered Pompeii.

FAO is the world's answer to the atomic bomb.

—Sir John Boyd Orr

High-Level Production and Consumption

By WILLARD W. COCHRANE. *We have high farm production now and like it. Why not high domestic consumption to keep it up? This writer outlines briefly several ways in which this can be accomplished, some of which have already been tried.*

FOR FIVE YEARS now farmers have thought in terms of full production and worked to achieve it. In this effort the production of agricultural commodities has trended steadily upward. And it is estimated that the net output from farms in 1945 is approximately 30 percent above the 1935–39 average. Now that final victory is achieved and the end of relief feeding is in sight (although it is now at its height) there is widespread fear among farmers and their friends that the heavy demands of the last few years will slacken off. Hence, there is talk in some quarters of controlling or curtailing agricultural production. But are there not good arguments for not curtailing production on individual farms?

The upswing in production from 1940–45 is not readily reversible. This sustained upward trend in production has not been due to exceptionally favorable weather nor has it been due to the diversion into agriculture of more resources, labor, and capital. The substantial increase in production between 1940 and 1945 was due almost entirely to improvements in technology—improvements that will not now be discarded by farmers, come prosperity or depression. Although there are some offsetting factors, it seems safe to conclude that these technological developments are sufficient in themselves to sustain our agriculture at the wartime levels without depleting the agricultural plant. In brief, the technological developments of the war are well-nigh irreversible and will literally force agriculture to produce at high levels.

But assuming for the moment that it is possible to curtail farm production, there are good economic reasons why we do not want to curtail agricultural production on individual farms, thus holding the size of the national agricultural plant constant. If we support the general level of agricultural prices by reducing total output some resources must be taken out of production. If this reduction is effected by apportioning a fraction of it to each individual farm, then efficient resources along with the less efficient resources must be held idle and this would make for high-cost, inefficient production. And because overhead costs constitute a large share of total costs in farming, a restriction in output on an individual farm means that the overhead costs must be carried on a smaller total output, therefore average unit costs must increase. Further, the farmer is then marketing fewer units of produce from which he may receive an income, so unless the demand for agricultural commodities is very inelastic and forces a large increase in prices, the individual may gain nothing, since he is producing at a higher cost and is selling fewer units of produce.

There are administrative difficulties in production control, too. With approximately 6 million farms in the United States, if total agricultural production is to be reduced, a program of production control must be developed which will reach down to each of these farms. A highly restrictive program is called for on each individual farm—restrictive with regard to managerial decisions—and farmers have clearly indicated that they do not like such rigorous controls.

The record of the 1930's with regard to production control is rather dismal as seen from this distance. It is true that in regard to cotton, and to a lesser extent to wheat, some reduction in output took place. But this is not true for other commodities, and certainly it is not true with regard to total output, which increased somewhat. Farmers simply shifted out of restricted commodities into other enterprises and so held up total output. And in the commodities covered in the restriction program, farmers shifted their production to their best land, used more fertilizer, used improved strains and varieties. In that way they partially and in some cases they entirely offset the anticipated decrease in output from a decrease in planted acreage. In short, we never developed programs *sufficiently restrictive in scope* to actually reduce total output during the 1930's.

Unbeatable

This war has demonstrated that when the American businessman and the American worker and the American farmer work together, they form an unbeatable team.

—Franklin D. Roosevelt

Strike a Balance

All this does not mean that we should now attempt to maintain a national agricultural plant in excess of needs. But it does mean that needs for food and fiber at least as great as those made manifest during the war may be satisfied on a sustained basis by American agriculture. If this output is too great in relation to the need for nonagricultural goods and services, then in an effort to strike a balance in the over-all economy some resources must be shifted out of agriculture. But the first to go should be those that are combined in inefficient operations—not those combined in efficient operations. And certainly resources should not be held idle in agriculture to reduce the volume of output. We want an expanding economy even though it means uprooting and shifting resources; not a contracting economy where efficient resources are held idle.

Two Fields

But before we start transferring resources out of agriculture—in our thinking at least—let us explore the possibility of moving into consumption or use the wartime levels of food and fiber output. There are two great areas of effective demand—foreign and domestic. The volume of food and fiber that foreign outlets will take in the long-run period ahead is extremely uncertain. We know that effective foreign demands for food and fiber will drop considerably below those of the war and immediate postwar years. On the other hand, if a world relatively free of autarchic trade practices does materialize, the volume of exports of food and fiber in the long run should run considerably above the 1935–39 average. Hence, we may anticipate with some justification a pick-up in food and fiber exports from the 1935–39 level to contribute as a market to the increased production, but how much is anyone's guess.

Field of Promise

It is to the domestic market, and to American stomachs particularly, that we must turn for something approximating 90 percent of the demand for agricultural commodities. If we are able to achieve a high level of domestic food consumption in the reconstruction years, even though exports average no more than they did in 1935–39, *we can come fairly close to moving into consumption the wartime levels of food output.* But this high level of consumption is really a high level. It is something better than would be realized in a full-employment situation. And it is certainly much better than we would have by the disposal of surplus supplies through relief feeding. This high level of food consumption is one wherein the diets of all persons falling below the moderate-cost diet plan of the Bureau of Human Nutrition and Home Economics are raised to the moderate-cost plan, but in which all persons already consuming in excess of it continue to do so. A floor of nutritional adequacy is established under the diets of all persons in the United States.

But though to achieve the defined high level of food consumption would come close to moving into consumption the wartime levels of production, the specific quantities of the different foods demanded would vary considerably from the quantities produced during the war. For example, to satisfy the requirements of high-level consumption, the production of beans, peas, eggs, cereals, and fats and oils would probably need to be reduced from the wartime levels, while the production of fluid milk, dairy products, and most fruits and vegetables, particularly leafy, green, and yellow vegetables would need to be increased.

Dual Goal

Setting a goal of freedom to produce maximum quantities of desired goods for a strong and vigorous market is a goal which will appeal to most farmers. They still like to grow big crops. It will also appeal to the public. They want to be well fed.

—L. J. Norton

Such production adjustments would involve difficulties, but it is one thing to effect adjustments when over-all demand for food is maintained, and quite another thing to effect adjustments which are essentially contracting in nature.

Obviously, maintaining full employment would go a long way toward achieving the high level of food consumption. We have all seen during the war when we had something more than full employment, how consumers spent liberally for food, directing their choices so far as possible as it happens, toward high-resource-using foods, such as fruits, dairy products, and meats. Thus, agriculture has a paramount interest in maintaining full employment wherein consumers have the money to buy the kinds and quantities of foods they want. But it is beyond the scope of this paper to discuss the means of achieving full employment. All we know is that we must have it.

But Still

But even with full employment, there will remain many low-income people who, if they were fortunate enough to have their incomes increased, would buy more food, and more expensive foods. And if we don't succeed in maintaining full employment many will not have the money to buy the foods they actually need. Thus, we see the necessity of studying, discussing, and placing in operation special food consumption programs which will maintain a high demand for food at all times. Such programs are necessary to move into consumption the volume of food that our farmers want to produce and such programs are necessary to move into consumption the volume and kinds of food which our people need in their diets to remain healthy and strong.

Many Ways

Food expenditures of low-income people may be increased in many ways. During the war to combat inflation the prices of all foods or certain foods were reduced through the device of producer subsidies. That device could be used to expand food consumption in more normal times. By this technique a part of the total costs are met by the Government somewhere along the production line. Hence, the price which is passed on to the consumer is reduced by the amount the Government defrays of the cost—or the amount of the subsidy.

Another procedure is to provide a cash grant to all consumer units whose incomes fall below some established minimum. Of course, all of the cash grant would not be used on food, but in the groups with lower incomes—the only place cash grants would be made—a very large part of the cash grant would undoubtedly be used for food. As another alternative the Stamp Plan might be revived which, as you remember, was a two-price system wherein low-income, relief families could buy certain foods with free blue stamps providing they bought a minimum amount of orange stamps.

New Way

A new plan—the Food Allotment Plan—has been developed during the war. It has not as yet been tested, but it seems to merit special consideration. Under this plan a basic food allotment is established; that is, the quantities of food deemed necessary to a nutritional and palatable diet have been set up and priced so that the total cost of the diet is known. From budgetary studies it has been learned about how much families in different income levels spend for food. In the lower income groups where the normal food expenditure is less than the cost of the basic food allotment, participating families would be provided with food currency sufficient in total value, which, when added to their normal food expenditure, would enable them to buy the complete basic food allotment.

To keep participants from substituting directly or indirectly a part of this supplementary income for items other than food, it is recommended that all families covered by the plan *buy* a book of food coupons sufficient in total value to buy the complete basic food allotment—but at a total price corresponding to their normal food expenditure. For example, if the total value of the coupon book or books were $500 per year for a four-member family and the normal food expenditure of that family were $400, they would be permitted to buy for $400 a food-coupon book having the value of $500. Of course, the Government would redeem at face value the food coupons turned in by retail outlets and would thus absorb the loss. In brief, these are the mechanics of the plan.

Can Maintain

What can this plan accomplish? It can maintain the demand for food at all times at or above the cost of the basic food allotment. For whenever family incomes drop to the point where a family or families cannot afford the basic food allotment, they would become eligible to enter the Food Allotment Plan. They would become eligible to receive a special income supplement, sufficient to maintain their over-all demand for food at the basic allotment level.

Already

But programs designed to enhance the purchasing power for foods among low-income people are not the only type of food-consumption programs we need in this country. We have made a good start with the school-lunch program, but it is only a start. Not more than 6.5 million of some 25 million school children are participating in it. We should expand this program to cover all school children and we should expand it to provide a complete, appetizing noon meal in all cases.

To complete the picture we need two more food-consumption programs: (1) A comprehensive industrial feeding program to provide all workers well-balanced noon meals readily accessible to them and (2) a program of food and nutritional assistance to expectant and nursing mothers and to preschool children. The industrial feeding program made rapid progress during the war on a voluntary basis. The Federal Government has popularized the idea and provided individual firms with technical assistance, but industrial feeding was not made mandatory or subsidized during the war as it was in England, for example. Private firms have, by and large, been quick to see the advantages of serving a low-priced adequate noon or midshift meal to their employees and have taken action to provide those meals.

Delayed

A food program directed to the special needs of expectant and nursing mothers and preschool children has never been developed in the United States. A comprehensive program designed to increase the food expenditures of low-income people would automatically meet the needs of expectant and nursing mothers and preschool children, since all persons would be provided with an income supplement sufficient to acquire a good adequate diet. But if such a comprehensive program designed to increase the expenditures for food by low-income people is not inaugurated, special programs should be placed in operation to guarantee that these vulnerable groups will not suffer from undernourishment and malnutrition.

If the latter course is followed, a program might be developed where expectant or nursing mothers or the guardians of preschool children could appear before the Public Health Service, and if it were determined that the individuals involved should have some type of food supplement, a medical doctor would make out a prescription calling for the consumption of specified quantities of certain foods. This prescription could then be filled either at food depots or specially designated private retail outlets and the Federal Government would meet the cost of the filled prescriptions.

Which Way Ahead?

Achieving the high level of food consumption as here defined would not by itself completely absorb the wartime levels of food production, but such an aggregative level of consumption would reduce the necessary adjustments in production to manageable proportions. But if we do not reach and maintain a high level of food consumption, agriculture in the United States must look forward to drastic downward readjustments either through (1) production control of the type initiated in the 1930's for which there is no assurance that it can be made effective, or (2) moving resources out of agriculture through the painful process of bankruptcy and failure following low prices, or (3) moving resources out of agriculture through the less painful but more difficult process wherein the least efficient resources in agriculture are transferred into the manufacturing and service trades.

In conclusion then, high-level consumption is an indispensable prerequisite of high-level production, hence a high level of food consumption must be the uncompromising goal of agriculture.

> *It is a strenuous thing this living the life of a free people.*
>
> —Woodrow Wilson

If We Want Rural Industries
Let's Get a Sparkplug

By GUS LARSON. *Many rural communities want a new industry or two. This author, believing that the next few years should present unusual opportunities for developing them, suggests ways in which the necessary information about markets, local resources, and methods of production that are suitable to rural areas may be vitalized and put to work.*

FOR YEARS no one in a small New York community had found any productive use for an abandoned mill. Then, not long ago, an industrial chemist spent a vacation there and got an idea. Why not convert the old mill into a chemical mixing plant? The chemist obtained the capital, added his know-how, and started the now successful chemical plant.

This New York community of 100 people acquired a small industry and the jobs that go along with it because someone from another community recognized an unused resource and did something about it. The chemist was able to see the possibilities of the mill because of his knowledge of the chemical industry. He had provided what the community lacked in ideas, capital, and knowledge.

This community illustrates just one way in which small industries are born. An industry may be started by an individual or group of individuals with knowledge—knowledge of a need in their very home town and knowledge of about how to meet that need. It may be started by a community planning group which has studied the needs for more local employment, looked for industries suitable to their community, and then interested local or outside capital and management. Or it may be started by someone in the community who has heard of similar successful small industries elsewhere. In general, probably most successful industries are started by those who get ideas from something either seen or learned.

Suppose you have some capital that you want to invest in an industry for your home town. Like lots of others you can see good times and inevitable industrial expansion ahead in the next few years. But you do not know what kind of business would be successful in your community. Would it be any advantage to you to have one authoritative place to go in your State where you can find out about the kinds of rural industries that are successfully operating within it, what the capital and equipment requirements are, how to appraise market prospects, and essential details? Would it be any easier if you had one reliable place to go for technical and economic advice? Would it help if other communities were studying their own resources and were actively putting this information within reach?

Or, if you wanted to start an industry somewhere else, perhaps in an entirely different region, would it be of any advantage to you to have one place in that State or in the Federal Government where you could get detailed information on the kinds of rural industries that might be operated there and some of the conditions under which fair success may be attained?

If your answer to most or part of these questions is in the affirmative, and if we do want more rural industries there is need now while our population and industry are in a fluid stage to provide the information sparkplugs that will actively promote the development of whatever rural resources can be profitably developed. These industries will provide needed jobs, pay rolls, and products that contribute to an ever higher level of living.

Could It Be Done?

Scattered efforts are already under way to help private enterprisers establish rural industries. Frequently information of a general nature is available from State Planning Boards and from Chambers of Commerce. Sometimes, too, the State Colleges provide information through their Economics and Engineering Departments.

In a few communities intensive local surveys have been conducted of their postwar prospects, including the number of jobs in private enterprise that are expected to be available, the local labor force, and the need for additional jobs. Studies of expected local demands suggest the kind of expansion that might prove profitable.

These studies have been conducted by local organizations such as the Chamber of Commerce or the C. E. D. Committee, cooperating with experts from the State Colleges or State Planning Board and with the Federal Departments of Agriculture and Commerce. Such studies have been completed in Albert Lea, Minn., in Anderson, S. C., in Fort Smith, Ark., in Augusta County, Va., and in several counties in South Dakota and in Oklahoma.

Other studies provide scattered information on particular industries or on a particular business problem. The Arkansas Economic Council has mimeographed a series of summary fact sheets for such enterprises as a mattress factory, a furniture plant, and a small feed mill. Similar information is provided on a more comprehensive basis in a booklet "Alfalfa Dehydrating Mills" published by the South Dakota Resources Commission and in the bulletin "Will Making Concrete Blocks Pay In Your Community?" published jointly by the Federal Departments of Commerce and Agriculture. Similar bulletins are available from the Department of Agriculture on local fertilizer mixing and refrigerated locker plants as well as on

Doing

The great end of life is not knowledge but action.

—Thomas Huxley

organizing a cooperative cotton gin and the cooperative possibilities in freezing fruits and vegetables.

The U. S. Department of Commerce has begun to publish material of help to all small businesses. For example it has recently issued a booklet called "Credit Sources for Small Business." It is prepared to give small businessmen advice on patents and other technical information that it collects through such organizations as the Geological Survey.

One difficulty with the efforts to date is that they are too few and too scattered. Suppose there were a national set-up which would integrate the efforts of the community, the State, and of the Federal Government, all of whom are working in the same direction. Suppose that this set-up was patterned after the Agricultural Extension Service—certainly an efficient organization for getting information around and for providing production know-how. Could it be done?

No attempt is made here to lay down a set pattern of action but a sketchy picture of the kind of work that would be required by local communities, the States, the Federal Government, and by private organizations has value.

Community Part

An individual or group of individuals wanting to start an industry in their community may already have an idea. It may be something they read about or may be something related to the business they are already in. Their part in the industrialization process would be to supply the management ability and the investment funds.

If they could go to a nearby college and secure the economic facts and the production know-how, they would be able to supply the prospective industry with a necessary sparkplug. It is just possible that some member of the engineering faculty is well versed in the particular kind of industry that the prospective enterpriser has in mind. If not, some arrangements might be made through the college whereby the prospective enterprisers would be introduced to some other engineer who could help them.

The dollars-and-cents aspect of the business would also require some help, probably from the Economics department. Facilities might be made available whereby they could get help in making a market survey for the product they want to manufacture. It might take some research to give them the needed facts on competitive prices and the most economic size of plant to establish.

Such a service available to individuals and groups would also be able to service Chambers of Commerce or other interested groups who are interested not in a particular kind of plant, but in a survey of the resources that are available for further development. They could get technical assistance in making studies of their resources and the kinds of industries which could be used to develop them more effectively. Carefully chosen people in the community would take part in the assembly, analysis, and presentation of facts obtained in such studies. Local citizens and groups could take action in the light of the material and aid provided. Prospects who were considering a location would also have access to this information and to State advice as to technicalities.

Would not well-sifted economic facts, capable of verification, have a more wholesome influence than special concessions offered in the way of taxes and a docile population?

State Part

The focal center of rural industrialization activities would be in the State. The responsible State agency might well be the present university or college, cooperating with the State development commission, the State resources board, or the State department of commerce. They would assemble and sift authoritative material on rural industries and unused resources in the State, and would quickly begin to make this information available to the public. This agency would serve as a point of contact for communities or individuals who want advice from State technicians in appraising resources and in working out ways in which these resources could be used. This State agency might also work closely with business, farm, and labor organizations, to spur well-considered action at the community level.

Money would need to be appropriated by the State legislatures and special facilities would need to be established in the States to service the people along the lines already described. In this work and in other ways, the Federal Government would need to stand behind, encourage, and assist the States in all practicable ways.

Federal Part

The Government through its present agencies like the Departments of Agriculture and Commerce, would accelerate their efforts to find out more about rural industries over the country. They would begin to make this information available through the outlets to the people—through newspapers, magazines, radio, all effective ways. Above all they would make the information available through the responsible State agencies.

But meanwhile along with the information job some possibilities for undeveloped rural industries might be pointed out and some simplified material written. This material would be based on facts which now lie dormant in tons of technical literature such as in the various censuses of business and of manufactures, the geological reports, and in the minds of Government technicians. In addition, some scientists and technicians of the Government might hold themselves ready under well-specified conditions to help the communities through the State agencies that want to study and develop their resources.

Private Organization

Success of the entire study, information, and advisory plan would depend chiefly on the extent to which local groups and organizations obtained community cooperation. These groups would have to spearhead their own local studies, would study, sift, and weigh their material, keep verifying possibilities in mind, and develop confidence in the reliability of their materials. Often they would make their own plans for developing whatever rural industries were shown to be economically sound, or for calling the potentialities to the attention of seeking capital and enterprise.

Central Valley Project— Highlights of Its History

By MARY MONTGOMERY. *As the Central Valley Project in California and the problems it has brought to the fore are of interest far beyond its boundaries a brief background history of these issues is in order.*

WEST of the Sierra Nevada and east of the Coast Range, between Mount Shasta on the north and the Tehachapis on the south, lies the great Central Valley of California. It is 450 miles long and approximately 50 miles wide—about half as large as England. Two major rivers flow through the valley floor, the Sacramento from the north and the San Joaquin from the south.

The Central Valley Project, now being constructed by the United States Bureau of Reclamation, is a complex system of water works and power facilities designed to fulfill a number of purposes, chief of which are to furnish irigation water to areas now having none or a deficient supply, the development of hydroelectric power, the prevention of floods, the improvement of navigation, the repulsion of saline waters, and the furnishing of municipal and industrial water supplies.

Many problems have arisen in connection with the project. Controversy over the acreage-limitation features of Reclamation Law and the distribution of public power are two of the major points.

The project is the culmination of a long history of water planning in the State. For almost 70 years both the Federal and State Governments have made studies leading to the development of California's water resources. In 1874 a three-man commission of the War Department, appointed the previous year by Congress, recommended the first valley-wide plan for coordinated water development. Since its inception in 1902 the Bureau of Reclamation has made investigations in the Central Valley. In 1878 the first State Engineer of California, William Hammond Hall, initiated investigations under an act appropriating $100,000 "to provide a system of irrigation, promote rapid drainage and improve navigation on the Sacramento and San Joaquin Rivers." Interest in public water development has been strong in California ever since, and many reports and meetings have been concerned with the subject.

In 1920 the State of California began a series of detailed studies of water resources which by 1930 had led to the formulation of a State Water Plan. This is one of the most comprehensive and carefully worked out master plans for resource development which any State has ever made. More than $1,000,000 was spent in its development. It was essentially a long-range plan of ultimate water development, but out of it grew plans for a specific Central Valley Project not unlike the project now under construction. These plans were developed by the Office of the State Engineer and the Division of Water Resources but were reviewed and approved by joint legislative committees.

A joint Federal-State Water Resources Commission (commonly known as the Hoover-Young Commission) made a report to the President of the United States and to the Governor of California in late 1930. It recommended construction of the Central Valley Project and recommended Federal financial participation in the project. Consideration was given in the State reports and the report of the Hoover-Young Commission to financial feasibility, and it was concluded that the project was feasible if all benefits were considered and if funds could be obtained at a sufficiently low rate of interest.

Law Enactment

The State water planning led to the Central Valley Project Act of 1933. This act authorized the construction of a Central Valley Project similar to the one now under construction by the Bureau of Reclamation and provided that revenue bonds not exceeding 170 million dollars could be issued. It was expected that Federal financial assistance could be obtained and the amount of the bond issue was to be reduced by the amount of such assistance.

One feature of the Central Valley Project Act, on which there was great difference of opinion and a severe battle in the legislature, was the provision, finally incorporated, providing that preference should be given to public agencies in the distribution of any power that might be developed and the implementation of this provision by authorization of a transmission line from Shasta to Antioch.

Opponents of the project carried it to the people of the State in a referendum vote in late 1933. A chief opponent was the large private utility which has virtually a monopoly in the distribution of electricity and gas in northern and central California. The act was upheld by a narrow margin at this special election.

To the Government

With the successful outcome of the referendum of 1933, the stage seemed set for State construction of the Central Valley Project. It was then the middle of the depression, however, and the State could not raise the necessary funds. State officials appealed to the Federal Government for aid and assistance in financing. Applications for aid were made to the Federal Emergency Administration of Public Works, but they were not acted upon favorably. In accordance with an act passed by the legislature in 1935 the State Engineer of California went to Washington, D. C., and attempted to interest Federal officials and congressional committees. To one of the committees he stated that the people of California were so desperate to secure construction of the project that they were willing to accept Federal control rather than the State control, which they preferred, if that was necessary to get the project built.

Congress authorized, but did not appropriate, 12 million dollars as a Federal contribution to the project in August 1935. At the request of certain State officials, the Bureau of Reclamation began formal negotiations at this time, and secured presidential allocation of funds in September. The Secretary of the Interior made a finding of feasibility and in late 1935 recommended its construction as a Federal reclamation project. His finding was approved by the President immediately. The project was authorized by Congress under the Rivers and Harbors Act in 1937.

Acreage Limitation

During the period 1935 to 1943 California Congressmen and State officials supported funds for construction by the Bureau of Reclamation under reclamation laws. As recent evidence has made clear, however, many people in the State did not understand fully the provisions of reclamation law. As a result, the limitation of acreage to which water may be supplied from a Federal reclamation project has developed into one of the most controversial issues involved in the Central Valley Project.

Under the law, project water may be furnished to 160 acres in single ownership of 320 acres of community property if the owner is married. Upon signature of a recordable contract with the Department of the Interior, in which he agrees to dispose of his "excess" acreage at a price that does not reflect an increased value due to the project facilities (constructed with Federal funds), the owner may receive water to irrigate his excess lands for a period of 10 years. Or he may receive project water for 160 acres, and then dry-farm or use irrigation water from present sources for the remainder of his property. Thus he is under no compulsion to sell his excess lands.

The misunderstanding of reclamation law grew out of the circumstances surrounding Federal adoption of the project. Groups within California who were eager to obtain interest-free funds and a 40-year repayment period, also implicit in reclamation law, minimized the importance or hopefully assumed repeal or nonenforcement of the acreage limitation. In the early period the Bureau of Reclamation did not make a public issue of the question, nor did it point publicly to the effects of acreage-limitation features of the law.

Repeal Defeated

When major parts of the project were almost completed in 1943 and time was drawing near for delivery of water, large landowners in the project area and various other groups began to agitate for repeal of the limitation. In 1944 a Congressman from the San Joaquin Valley introduced an amendment to the Omnibus Rivers and Harbors Bill, calling for repeal of the acreage-limitation feature of Reclamation law. Although this measure passed the House with little popular notice, a storm of protest was aroused in California and elsewhere in the Nation. Well over 90 percent of the landowners in the Central Valley own less than 160 acres of land and the great majority of them opposed the repeal of the limitation. The amendment was ultimately defeated.

During the past year members of the Bureau of Reclamation have made successful efforts to inform the rank and file of Valley farmers of the provisions of the 160-acre limitation and other features of Reclamation law. In October 1945 the Bureau signed a contract with one irrigation district in the San Joaquin Valley, the Southern San Joaquin Municipal Utility District, a contract which incorporates all features of the law, including the acreage limitation. There are still groups in the State, however, who continue to work for repeal of the limitation.

Hydroelectric Power

Much of the controversy over the project has centered in the proposed development, disposal, and sale of hydroelectric power. The Central Valley Project's market area coincides with that of the large power company previously mentioned. The actual market within this area is expanding beyond the present capacity of the company. The Bureau of Reclamation has been granted authority to construct transmission facilities, but thus far Congress has not been willing to appropriate the necessary funds, although 44 public agencies have either inquired about or made application to receive Central Valley power. The only transmission lines available are those of the private company and it is clearly to the interest of this company to keep this situation in effect. The company has begun construction of new lines, for which the only power available is the publicly generated power from Shasta Dam, part of the Central Valley Project.

As pointed out, the company opposed the passage of the State Central Valley Project Act in 1933. According to company representatives this opposition stemmed chiefly from the fact there was already more than sufficient power to supply the needs within the State. Since the Bureau of Reclamation took over the project, the company has opposed the passage of a revenue bond law by the California Legislature which would amend the 1933 act so as to remove some of the restrictions on issuing revenue bonds, and thus make it possible for municipalities to receive money to build distribution systems to take power from Shasta. It has tried at the same time to make certain that it will be able to make arrangements with the Federal Government to take the power made available by the project, thus forestalling any competition from public agencies. Although in 1933 it said that "power resources are far ahead of consumption," the company now expresses willingness to buy all the Central Valley Project power. Because of the World War and the fact that the private company alone had transmission facilities, the company realized its goal and was awarded a contract with the Department of the Interior in September 1943 to purchase Shasta power. This contract will not expire until the end of 1949.

The Bureau of Reclamation and supporters of public power continue to ask Congress for appropriations for transmission lines. In November 1945 the House Committee on Appropriations recommended $780,000 for two short lines. There is no reason to believe that the struggle over public power in California has ended. It is apparently destined to continue as an active political issue for many years.

Small landowners are the most precious part of the State.

—THOMAS JEFFERSON

Tenure Reform IN *Puerto Rico*

By MARSHALL HARRIS. *Those in this country who are interested in satisfactory land tenure and who realize its connection with the general well-being of citizens will want to know of the progress of land reform in our Island territory for it has long been recognized that land problems were the root of the poverty in Puerto Rico.*

IN PUERTO RICO the terrific pressure of population upon land resources is staggering. Thus, the importance of control over agricultural land cannot be over-estimated. How would we in the United States live if there were 700 million of us instead of 140 million?

Puerto Rico has slightly more than 2 million acres, only 47 percent of which was cropland in 1940. On this island, smaller than many of our counties, about 2 million people live largely from agriculture. Thus, each inhabitant has less than a half-acre of cropland. By comparison, the land resources of the United States permit about 2½ acres of cropland per person.

But this is only a partial picture. In the United States less than one-fourth of the people depend directly upon agriculture for a living, while more than three-fourths of the Puerto Ricans live by farming. Then the average net production per acre of cropland is not so large in Puerto Rico as in this country. As contrasted with the United States the situation is about as follows: (a) one-fifth as much cropland per person, (b) three times as large a proportion of the population dependent upon agriculture, and (c) relatively less productive land.

The Congress of the United States, even in 1900, knew that control over land in Puerto Rico would be concentrated into a few hands in the absence of some limitation on corporate ownership. The Congress was aware of the inevitable economic, social, and political consequences, and it was not unmindful of its responsibility to the people of the Island. Consequently, a joint resolution provided that no corporation could lawfully own and control land in excess of 500 acres. Later development proved the wisdom of this action.

For more than a third of a century, the 500-acre restriction was openly violated by many corporations, and its enforcement was largely ignored by corporate-controlled governmental officials. By 1934–35, sugar mills and allied interests alone controlled almost one-fifth of the land of the Island, of which approximately 280,000 acres were owned and 120,000 acres were leased. This represented more than half of the land that was in farms growing sugar cane. It was estimated by reliable authorities that the big four American-owned companies held about 107,000 acres and rented 78,000 acres, or 46 percent of all land operated by sugar companies.

Early Reforms

The first legislation after 1900 to achieve some improvement of tenure conditions was the creation of a Homestead Commission in 1921 to provide land for the landless. Small farms were established to the number of 2,074, comprising 23,750 acres. Between 1921 and 1935 the Homestead Commission was the only tenure-improvement agency on the Island.

The Puerto Rico Reconstruction Administration was created by Executive Order of the President on May 28, 1935. One of its major objectives was to develop homes and farms for farm laborers and for small farmers. Garden homes on 1-acre plots were made available to large numbers of rural and urban workers. Subsistence farms of 2 to 3 acres each were developed for more than 8,000 farmers. A few small family farms of from 4 to 20 acres were established, and 19 large-scale units and 12 cooperative farms were put into operation. This program was later terminated by the Congress, as was the corresponding program in the United States.

Tenure improvement in Puerto Rico, although severely limited, continues as an important aspect of the farm-home ownership and rehabilitation programs of the Farm Security Administration. These two programs are generally recognized on the Island as sorely needed and highly successful. The Farm Credit Administration has been furnishing funds for the purchase of farms for some time.

Enforcement

In 1936, the second Island-born Attorney General declared his intention to enforce the 500-acre law, so long disregarded, and he proceeded to take the necessary legal steps. But it was not until March 16, 1942, that the final decision making possible the full enforcement of the limitation was handed down by the United States Supreme Court. In confident anticipation of this favorable decision, the Insular Legislature had enacted the requisite enabling legislation a year earlier. So the legal deck was cleared for action, and fundamental land reform got under way immediately. .

Tension

Population pressure on the one hand and concentration of landownership on the other explain in large part the emotional tension that grew up during the last decade around the land-tenure situation on the Island.

A storm was brewing in San Juan by the middle of the 1930's. People were malcontent; they were looking for social justice. Underemployment was widespread, and many heads of families were totally unemployed. Hunger, poverty, and disease had reached horrible depths. Half of the families of the Island had only one common room in which to live, eat, and sleep. Meat production was at the rate of 9 pounds and milk production was 10 gallons a year for each person.

The provocative battle cry of one political party was "Pan, Tierra y Libertad"—Bread, Land and Liberty! Its candidates pledged fundamental economic reforms. Land was basic, for with it went bread and liberty. The party was swept into power, and is still there.

It was clearly recognized by Insular leaders and by informed persons in the United States that tenure improvement would have to be expanded if needed adjustment were to be effected. It was with this in mind that the Insular Legislature enacted the Land Law of 1941.

The Land Authority

The Land Law created in the Insular Department of Agriculture a board designated as the Land Authority. The Authority was given four major responsibilities:

(1) To end corporate *latifundia* (large landed estates) and to prevent their reappearance in the future.

(2) To assist in the creation of new landowners.

(3) To provide land upon which *agregados* (squatters) and slum dwellers would build their homes.

(4) To facilitate the efficient and economic use of land for the public benefit.

For these purposes the Land Authority has the power to force corporations to dispose of all their land in excess of 500 acres. It has preference to buy such land provided it offers a price equal to that of the highest bidder. Ample funds are being provided for the orderly acquisition of all land subject to this law.

The land acquired can be used for (a) development of "owner-operated" *family farms,* (b) division into small *subsistence plots* for laborers, and (c) establishment of *proportional-profit* farms. A new day is dawning on our territory in the Caribbean—the gateway to South America. Freedom from want and freedom from fear are being underpinned by tenure reform.

Family Farms

Operators who own no other land and who are qualified by 5 years' experience in farming are being established on family farms. They are not given fee simple title. Rather a man obtains a right to use and to have the products of the farm for life—a usufruct—for an annual payment large enough to repay the principal in 40 years, with interest at 3 percent. The one who holds the usufruct has freedom of operation, but he must follow good soil-conservation practices. In case of cancellation or termination of the contract, he may remove improvements and harvest the growing crops. In case of death, the heirs receive the amount paid on the principal, or the Authority may permit an heir to continue the usufruct.

Extensive operations are not planned in establishing the family

Agitator

People talk about agitators, but the only real agitator is injustice; and the only way to allay the agitation is to correct the injustice.

Sir Charles Napier

farms. This work is left mainly to the Farm Security Administration, which is operating so effectively its Home Ownership Program.

Subsistence Plots

Small garden-home plots are being supplied to rural squatters and urban slum dwellers who previously had built their tiny shacks on land that belonged to another and whose only means of livelihood was in wages for their labor. The tenure rights of these laborers in the land on which their homes stood was most precarious. The land was so completely "monopolized" that thousands of families were nothing more than tenants-at-will of the large landholders, usually of the owners for whom they worked. The laborer could thus be dispossessed at the will of the owner.

The garden-home tracts range from about one-fourth of an acre to 3 acres. The Authority may advance poor families as much as $150 for building materials for a house. The smaller parcels are ceded gratuitously. Rent for the larger tracts may be $3 a year or less. The funds collected are used for the sole benefit of the local community.

Considerable progress is being made in providing landless folk with a small space for house and garden and subsistence livestock, under secure tenure but at a minimum price. This program is closely related to the proportional-profits farm project, for the laborers are mostly employed on these farms.

Proportional-Profit

The proportional-profit idea is the core of the tenure-improvement program of the Land Authority. It was designed to overcome the problems that emerged in the earlier programs and to meet the challenge flung in the face of the land-tenure reformers by those who would maintain the *status-quo* in Puerto Rico. The proportional-profit idea aimed at attaining the highly efficient production that is possible under large-scale corporate operation and the use of land that would best serve the public interest.

Family Farm

> *Let it please thee to keep in order a moderate-sized farm, that so thy garners may be full of fruits in their season.*
>
> —Hesiod

To accomplish these aims the Authority tries to combine the efficiency of large-scale production and technically qualified management with desirable land use and a hard-working profit-sharing labor force. If this is done successfully, the toughest nut facing Puerto Rican land planners will have been cracked.

Proportional-profit farms range up to 500 acres or larger if necessary for higher production efficiency and better land use. They are "leased" to qualified managers under conditions that are acceptable to the Authority. The manager plays much the same part he did under the corporate setup. He receives a proportion of the net profit for his services. Laborers receive the prevailing wages, and each shares in the profit to the extent of the days he worked and in proportion to the wages received. The Authority supplies all of the land and operating capital, audits all accounts, and sees that conditions of the contract are met.

The Crux

This new hybrid—the proportional-profit farm—is a cross between private and public ownership, between corporate and cooperate organization, between capitalistic and communistic enterprise. As such, its strength and weakness in actual operation should be scientifically studied.

The proportional-profit farm is a forthright endeavor to maximize social gain through capitalizing on profit motive, technological improvement, scientific management, efficient labor, and wide distribution of net income. Its success on the Island is inextricably interwoven with the garden-home program for laborers. The two will rise or fall together.

The Future

The whole tenure-reform program in Puerto Rico doubtless will be attacked at every turn in the road by powerful corporations, as it has been in the past. It could be impeded seriously through the appointment of an unsympathetic Governor. The economic relation between Puerto Rico and the United States will have a significant influence.

The human factor is of crucial importance. The triumvirate—public officials, farm managers, and wage laborers—must function as a unit. If any of these fails the entire structure will fall. Public officials are responsible for sound financing, for adequate policing, and for selecting qualified managers. The managers are responsible for efficient organization, for technological improvements, and for labor morale. The laborers are responsible for personal skills, for diligent performance, and for a first-rate live-at-home program.

We in the United States have a twofold interest in this Puerto Rican tenure-improvement program. First, we shall be judged as a world power in part by economic, social, and political progress in our territories. Second, the processes evolved may be usable in the solution of similar problems in continental United States. It is ours to watch and work for ultimate success.

Price

If any Nation would keep security for itself, it must be ready and willing to share security with all. That is the price which each Nation will have to pay for world peace.

—HARRY S. TRUMAN

African Agriculture:

ORGANIZED FOR PROGRESS

By HERBERT KING. *Production of food and raw materials of commerce in all parts of the world interests us today. Trained native Africans gradually take their place in the development of agriculture and forestry in the British Colonies of Africa.*

BRITISH COLONIES in Africa have considerable populations with a long tradition of pastoralism or agriculture and a well-developed, if simple, social, and political life. The objective now of the various Colonial governments is to improve the existing rural economy by introducing new and better food and money crops, and by making every unit of land produce more cattle or more food. Agricultural improvements must be accompanied by improvements in water supplies, hygiene, sanitation, education, and transport.

Each Colony formulates its own agricultural policy, and appoints its technical staffs of European experts with qualifications suited to its particular needs. These experts are selected science graduates who then have 2 years of graduate study—at the Cambridge School of Agriculture and at the Imperial College of Tropical Agriculture, Trinidad—before joining the Agricultural Department of the colonies to which they have been appointed.

The technical staff is responsible for research on soils, plant diseases, pests, seed selection, plant breeding, and other matters affecting agriculture. They rely largely on administrative and field agricultural officers to apply in the field the results of their research, but in some Colonies this work is done by subordinate staffs of African agriculturalists. This practice is likely to become general as more Africans are trained.

The Directorate of the Agricultural Department of Nigeria and its central laboratories for botanical, chemical, and entomological research are at Ibadan. Attached to headquarters, in Southern Nigeria, are several experimental farms where work is done on subsistence crops such as yams, corn, beans, and cassava, and on money crops—oil-bearing plants, cacao, citrus fruits, cotton, coffee. Attention is given to seed selection, plant breeding, methods of cultivation, crop rotations.

In the absence of animals in these tsetse-ridden equatorial forests, green-manuring offers best prospects of maintaining indefinitely the fertility of the same patch of ground. Only by the general application of some such method can the Africans be prevented from destroying the forest in their search for new ground and only when it is demonstrated that the new system is better, will they abandon the shifting agriculture they have used so long.

Similar organizations serve the Gold Coast and Sierra Leone. The environment, products, and agricultural problems are similar to those in Southern Nigeria, though there is some change in emphasis on the crops. Swamp or paddy rice, for instance, receives special attention in Sierra Leone, and cacao in the Gold Coast.

In the Northern Provinces of Nigeria, there is an agricultural center at Samaru, with experimental farms. The tropical grass-lands support cattle. The tsetse fly is absent, other cattle diseases can be controlled by dipping or inoculation, and the real problem is to evolve a balanced economy of mixed cattle-keeping and field agriculture. This is the problem throughout the tropical grassland of West and East Africa.

Complications

Cattle enlarge the agricultural horizon but complicate farm economy. They require selection according to whether they are to be used for stock, draught, or dairying; crops must be grown for feed and fodder must be stored for the prolonged dry season. But draught-cattle make it possible to plough more land, and manure offers an alternative to green manuring.

The concern is with field agriculture as distinct from the market gardening of the south, and attention is naturally paid to the growing of money crops, such as ground nuts and cotton. Improvements must be thoroughly tested before campaigns to persuade Africans to adopt them are begun and types of ploughs and cattlepens which can be made by local craftsmen from local materials are selected.

In East Africa, the same basic research on native subsistence crops is pursued. In Uganda, as the banana is to many a staple food, selection trials of 53 varieties have been made. Methods of controlling the banana weevil have been sought through better cultivation and introducing insects which prey on it. Among the objects of research are cotton in Uganda, tea, tobacco, and cotton in Nyasaland, and coffee in Kenya. Cattle of plateau grasslands have been afflicted by rinderpest and tsetse fly; the control of disease and the reintroduction of cattle is a primary objective of research.

Common to All

Many problems are common to all British Colonial Africa—the resistance to improvement through long-established native custom, particularly in regard to cattle, and tree and grass burning; cattle pests and diseases and the need of serums; soil erosion and forest depletion. Therefore interterritorial conferences of agricultural experts have been held, especially in East Africa.

African Center

The East African Agricultural Research Station at Amani in Tanganyika is a center where common problems can be studied. It is devoted to long-term research in those problems which affect all East African territories. When conditions make possible an increase in its staff, it should be of great help to the separate Colonial departments. Similar stations may be set up in other regions of the Colonial Empire.

Even wider contacts are necessary. Crops that do not meet the exact needs of commerce may be unsalable. The position is now remedied but

Nigerian cocoa, because of unskilled and careless handling, once had a bad reputation and was difficult to sell even at low prices. It is not easy to teach the Africans the need for meticulous care in such matters.

In England

The Imperial Institute in London is a link between producers and industrial consumers. On the advisory committees of its Council scientists meet businessmen to discuss timber, vegetable fibers, oils, gums and resin, tanning materials, and other commodities. Detailed information on these is passed on to the Colonies and the Dominions.

On the Imperial Agricultural Bureaux the Colonies, Dominions, and Britain are all represented. The Bureaux consist of experts in different fields of scientific study, each acting as a clearing house of information. The different bureaux deal with soil science, plant genetics, crop and fruit production, animal genetics, health and nutrition, dairying, parasitology, and forestry. The organization operates under an Executive Council.

The Imperial Institute of Entomology and the Imperial Mycological Institute also come under this Executive Council, but their research work is done on identification. Individual research workers in the Colonies are kept informed on progress in their science in other parts of the world.

The Colonial Advisory Council of Agriculture and Animal Welfare in Britain consists of scientists under the Chairmanship of the Parliamentary Under-Secretary of State for the Colonies. This Council advises on the schemes formulated by the individual Colonies and sent to the Colonial Office for approval.

Forestry

The Forestry Service in Africa is administered separately. Most Colonial territories have a separate Forest Department under a Conservator of Forests. The Conservator is responsible to the Government for carrying out Forest Ordinances, formulating forest policy, and administering it when approved. His staff of foresters is recruited in Britain and usually trained in the Universities of Oxford or Edinburgh, or the University College of Bangor.

These foresters usually become Divisional Forest Officers, responsible to the Conservator for the administration of the forests in their respective districts. In the Crown Forests, each is responsible for controlling fires, determining what timber shall be cut, its price, and so on. He has general supervision of the forests in the native areas, though their administration is the function of the native rulers, who employ native foresters and forest guards.

Native Foresters

The native foresters are specially trained, often at forestry schools such as those in Nigeria, Tanganyika, and

Thought

Human thought is the process by which human ends are ultimately answered.

—Daniel Webster

Uganda. As short-term forest policy is based on the psychology of the African farmers, its success rests largely on the foresters' influence over these farmers. Trained Africans are likely to be more successful than Europeans in demonstrating to farmers the value of new methods, and in encouraging them to put forest policy into effect. They have been very successful in Nyasaland where forest destruction was becoming critical and where forest policy aims to prevent erosion and to provide timber for houses, fences, and fuel.

State forests have been reserved for the whole community and Native Authority forests for those of each Native Authority area. Though coming under the general guidance and control of the State Forest Department, these are controlled and administered by Africans and the revenue will go to Native Treasuries.

Village forest areas in Nyasaland are designed to provide each village with a permanent woodland calculated on the basis of 2 acres per hut. Independent control and exclusive use are assured to the village through the headman. Already about 4,000 areas have been demarcated. Selection and demarcation are often entrusted to the Native Foresters who advise the headmen on what trees to plant, how to plant, how and when to prune the growth, how to protect it from dry-season fires.

The African has a role in the future of forestry as important as his role in agriculture. Much of the research on growth and regeneration of trees, nature of the forest crop, pests and diseases must be done in the forests by trained Europeans, but some of it may be done by trained Africans. Research on the strength of timber, its lasting qualities, and allied subjects is done at the Forest Production Research Laboratory, Princes Risborough. The Imperial Institute at London investigates minor forest products. The Imperial Forestry Institute at Oxford cooperates with forest officers in the study of forest flora and other matters, and teaches research methods.

Both in agriculture and forestry, a line of communication links the Colonial Office, research institutes, scientists employed in the Colonies, and the Africans themselves. Policy and experience are passed along the line, and African farmers are applying the results of research.

Until the peoples of the world understand and respect the interests of their neighbors, the victory will elude us. Until the peoples of the world embrace the democratic belief that the dignity of the individual is the basis of the success of nations, the world will not find an enduring peace.

—DWIGHT D. EISENHOWER

Books

What is Farming? By *GUSTAV E. LARSON* and *WALTER MAGNES TELLER*. D. Van Nostrand Co. New York. 410 pages.

AS AN introduction to modern farming in the United States, this book is written especially for three groups of men and women: (1) those who are attempting to decide whether they should take up farming after they are released from military service or civilian war jobs, (2) those farmers who are considering the advisability of moving to some other farming section, and (3) laymen who wish to learn more about living and working conditions on the farm.

It is a revised and enlarged edition of a book with the same title, published by the United States Armed Forces Institute for the use of military personnel in off-duty classes and self-instruction. Much of the textual material is based upon results of studies made by State Agricultural Experiment Stations and the United States Department of Agriculture. In addition, some 20 experts of the Department of Agriculture and Interior contributed factual data and advice on technical aspects.

Thought-provoking and self-appraisal questions are presented in the first part, which is devoted to orientation and an over-all summary, for consideration by prospective farmers and their families. Other questions and answers are designed to illustrate the importance of advance planning and to emphasize that success or failure in a farming venture is dependent upon a host of physical, economic, and human factors. Special care is exercised to bring out the advantages and disadvantages of farming from the viewpoint of the farm as a business and as a place to live.

Then comes an elementary but excellent discussion of the composition of our soil and water resources, the elements of agronomy, and the principles of conservation and good land management. Projected against this background is a description of the types of farming, and the kinds of crops and livestock produced in this country. Data show the relative investments required and returns received from different sizes and types of farms. The chapters dealing with part-time farming and the production of specific lines are more detailed and contain more helpful hints than might be expected in a book of this type, and reflect the growing interest of servicemen and factory workers in part-time and speciality farming.

Farm homes, buildings, and equipment are discussed in terms of health, comfort, efficiency, economy and safety. Standards and specifications for buildings and other practical suggestions are given.

The outlook and opportunities in American agriculture, and the numerous problems of selecting, financing and managing a farm are discussed. Special note is made of the requirements and skills involved in the selection and operation of irrigated, drained, and cut-over farms.

In conclusion, it should be repeated that this book is directed mainly to those who have had little or no farming experience. It is not for the agricultural expert, but experienced farmers and agricultural students will gain much useful information and a better perspective of farming from it. One of its special merits is that it presents a clear, unbiased picture of farming as a business and as a way of life. It is neither over-optimistic nor over-pessimistic as to opportunities in agriculture for those without previous farming experience. Each person is given the basis and is left to judge for himself whether he has the personal qualities and resources to make a success at farming and rural living.

—*Harold A. Vogel*

◆

EDUCATION FOR RURAL AMERICA. Edited by *FLOYD W. REEVES.* University of Chicago Press. Chicago. 213 pages.

THIRTEEN CHAPTERS prepared by 13 people prominent in rural-life leadership here make easy and interesting reading, and present a challenge to attack on all fronts the manifold and deep-rooted problems of this half of our national life.

With the exception of the introductory chapter by the editor of the volume, the chapters are papers given at the 1944 University of Chicago Conference on Education for Rural Communities. They argue for "better understanding among both rural and urban people of rural problems and rural-urban relationships."

Newton Edwards, in the first of these papers, analyzes with forthrightness the nineteenth century "capture of the national state by the forces of eastern capitalism." "And," he says, "educational leadership, in general, lent its blessing to the new industrial order and undertook to cultivate in youth the attitudes, the values, and the skills which that order demanded." The answer to present rural ills is not, he thinks, that farm youth must "turn cityward in search of economic and social opportunity or else settle down to subsistence farming," but rather the answer lies "in an improved operation of the economy as a whole."

Ralph W. Tyler shows that many earlier interpretations of the armed services' experience with education are conclusions not justified by a careful examination of the facts. For the most part, it is not that these findings, including illiteracy figures, tend to point the ineffectiveness of American education, but, rather, "these results may properly be interpreted as a serious indictment of the failure of the American people to provide educational opportunities throughout the country. . . ." Among the lessons accentuated by the conclusions of the training programs are: the need for clear objectives and the "primacy" of genuine motivation as a touchstone for effective learning. Some other lessons were the need for providing many and varied "real" opportunities for practicing what is learned; the importance of emphasizing the reasons for things taught; verification of the need for constant reexamination of the content of education; the marked improvements that ensue from the use of auditory and visual aids; the value of selecting students for advanced training on the basis of ability rather than income; support for the proposal that schools provide work experience and other mature responsibilities for students; notable improvements obtained by programs for training and retraining of teachers in service; the necessity of adequate support if training programs are to be effective.

In "Organization and Financing of Rural Schools," Howard A. Dawson points out that the solution of the most pressing problems in rural education depends upon the organization of satisfactory local units for the administration of rural schools. First it is essential to accept the proposition that the community school system should provide adequate educational opportunity for every child from the time he enters school until he is ready to take his place in adult society. Satisfactory local organization of rural school units can be obtained through adequate State laws through which reorganization can be effected, through area planning for proper organization, and through educational leadership and an informed public opinion. Economical and efficient expenditure of school funds is not possible without satisfactory local school organization, and good schools are not possible without adequate funds. Adequate financial support for most rural areas depends upon State support and Federal aid for education.

The role of economic cooperation in solving national and world problems is stressed by E. R. Bowen who reveals that cooperatives are now the biggest business of England and that, throughout the world, one-fourth of the people are members of cooperatives. "Cooperators believe that cooperation is the only hope for democracy. They believe with Henry Wallace that a cooperative economic society will be the living stream of thought for the twentieth century, as a democratic political society was the living stream of thought for the eighteenth century. They accept his challenge that 'The need is for a body of people in accord on general aims, as idealistic and as realistic as were the young Federalists of 1787, to channelize thought and initiate and consider proposals which may lead to a cooperative society.' . . . Cooperation as applied in cooperatives, which the world so badly needs to understand and practice, should be taught by every educational agency in the country."

Other chapters full of grist for the student of rural life and education are: "Farm Income, Migration, and Leisure" by Theodore W. Schultz; "Education for the Use of Resources" by George F. Gant; "The Contribution of the Land-Grant College to Rural Education" by Lloyd C. Emmons; "The School and the Improvement of Education in Rural Communities" by Virgil E. Herrick; "Library Service to Rural Communities" by Leon Carnovsky; "Philosophy and Activities of the Michigan State Farm Bureau in Adult Education" by Eugene A. Smaltz; "Training Rural Youth for Leadership" by B. F. Hennink; and "The Educational Program of the Farmers Union" by Mrs. Jerome Evanson.

—*Charl Ormond Williams*

USDA, MANAGER OF AMERICAN AGRICULTURE. By *FERDIE DEERING.* Oklahoma University Press. Norman, Okla. 213 pages.

IN THIS BOOK the deficiencies of the United States Department of Agriculture are described as a background for the author's suggestions for reorganization of the Department. As an analysis of the Department's deficiencies, it is more likely to be used as a source of allegedly authentic information for "campaign oratory" than as a stimulus to "thoughtful action that will lead to remedying the deficiencies of the USDA." The author starts on the premise that "no man living understands the complex set-up" of the USDA. "The observations contained herein grew out of that conclusion."

The author demonstrates that there are many things about the Department and its activities which, after years of study, he still does not understand, including the concept that USDA is not now and should not be allowed to become "Manager of American Agriculture."

Great emphasis is placed on the lack of coordination, at the county or local level, of the various activities of the Department. More effective organization in Washington is undoubtedly required to meet many problems of this character. But the author overlooks entirely the fact that an intensely interested and intelligent local citizenry can correct many of the sort of local administrative deficiencies to which so much space is devoted. Effective Federal-State-local cooperation which is required for the successful handling of most of the Department's activities, cannot be imposed from Washington. The author fails to give consideration to State and local responsibilities and opportunities in meeting the problems of effective service to farmers. An approach from this direction will probably be more productive of improvement than any suggestion put forth by the author.

The suggestion of "a clean sweep of all bureaus and agencies, with their appellations, departmental traditions, and selfish interests" sounds too much like the political approach of "turn the rascals out." The proposal for organization of the Department into three main divisions: Research, Administration, and Education and Information, has some merit perhaps, but is based upon a great oversimplification of the problem. Furthermore, it relates only to organization at the top and there is no outline or blueprint as to how the divisions would be organized so as to avoid the very deficiencies complained of by the author. There is the additional objection that the Administrative Division as proposed would overshadow the balance of the Department and perhaps attempt to become "Manager of American Agriculture."

The book contains many intemperate statements, such as "The effect of the duplication, overlapping, and inefficiency of an awkward, gangling department such as this is to bear down on the farmer rather than lift him up." Or ". . . because of its awkward congestion of bureaus and agencies, it (the USDA) constitutes one of the greatest stumbling blocks remaining in the way of soil conservation."

The USDA has plenty of deficiencies in organization and in its programs, but this book contributes very little either to a better understanding of them or to their correction.

—*Jesse W. Tapp*

SEAMAN A. KNAPP: SCHOOLMASTER OF AMERICAN AGRICULTURE. By *JOSEPH CANNON BAILEY.* Columbia University Press. New York. 307 pages.

IT IS an inspiring story that Joseph Cannon Bailey tells in this documented and definitive biography. He gives a clear-cut picture of that remarkable personality who revolutionized the teaching of agriculture in the colleges and founded the far-reaching county demonstration agent system of the United States. This book will prove a boon to all Extension workers, both in its philosophies and in its outline of the broad training county agents must have if they are to be of the greatest assistance to the people they serve.

"Teacher, preacher, businessman, farmer, and consummate politician or statesman," says Mr. Bailey, "he was worth his salt in all of them." And those of us, his followers, who have been with Extension work through its many-sided experiences know that he needed to be them all. As one pioneer home demonstration agent put it, when with hammer and nails she mended a hole burned in an old couple's floor, "Not one thing I have ever learned has come amiss in home demonstration work."

It is the "Schoolmaster of Agriculture" who takes first place in the story, and we see him creating a system of education which "reaches beyond the walls of the college classroom" and carries the findings of scientific research down to the farmer, his wife, and the children on the farm.

The Knapp philosophy was, "It is our mission to make a great common people and thus readjust the map of the world," and he set about doing it through the demonstration method of education, which is effective with the learned and the unlettered alike. "You may doubt what you hear, you may even doubt what you see," said he, "but you cannot doubt what you do for yourself." Putting his philosophy into practice to point a way out of boll-weevil despair, Dr. Knapp used good farmers with good farming practices as demonstrators in different parts of Texas in 1904–07. Results were so good that the demonstration as an effective teacher spread over the whole South in a very few years, bringing in its wake the Agricultural Extension Service, now at work in the 48 States, in Alaska, Puerto Rico, and Hawaii. All of it is the outgrowth of Dr. Knapp's nearly single-handed accomplishment. He had large responsibility in the passage of the Smith-Lever Act, provided the means that enabled the Agricultural Extension Service to get into action in the greatest adult education movement the world has ever seen.

"One of the rarest of all phenomena in the development and evolution of institutions," said Mr. Bailey, "is for an organization to remain faithful to the intention of its founder." But I believe with him that the greater proportion of the Extension staff today knows that it has actually participated in a method of education that has proved the efficacy of the demonstration and that we have clung to that method because of its results. The farm and the farm home bear witness, and local leaders who have become proficient in skills show that they can pass what they have learned on to their neighbors.

—*Jane S. McKimmon*

RURAL HUNTERDON: AN AGRICULTURAL HISTORY. *By HUBERT G. SCHMIDT.* Rutgers University Press. New Brunswick, N. J. 331 pages.

THE ECONOMIC development of the area that is now Hunterdon County, New Jersey, is the central theme of this volume. Agriculture has been the area's basic industry continuously since the pioneers settled there nearly two and one-half centuries ago. The time span of the county's history and its persistent rurality plus the highly commendable manner of execution give this study a significance that can be accorded to very few so-called local histories.

Hunterdon County has been spared many of the natural and man-made calamities that have afflicted other parts of the United States, and probably few other rural counties still have as many valuable source materials relating to its past. The county's official records are unusually complete, as are the files of local newspapers. A surprising number of account books of farmers, artisans, and businessmen are extant. There are large collections of correspondence, diaries, and other personal papers. In collecting and preserving these and other sources of historical data, the county has been fortunate in having a very active local historical society. The task of gristing these sources into a history has been enormous, and the bibliography and footnotes in this volume are a far-from-adequate measure of the author's task.

After epitomizing the stages of agricultural development through which the county has passed, the author describes the geographical features that have affected agriculture there and provides a brief account of the pre-white inhabitants. The chapter on "The People of Hunterdon" is developed chiefly with reference to the surprisingly large number of national groups that settled in the county, but emigration is also considered. Of prime importance is the first-hand evidence of the many individual reasons for settlement in America. The chapter on "Ways of Life" has a similar social emphasis. Here the changes in standards of living in terms of household equipment, lighting, water supply, food, and clothing are outlined. Other chapters trace the economic history of land ownership, forests and arable land, buildings, equipment, and methods of farming, crops, animal husbandry, transportation, communication and trade, industry, and labor, from the early eighteenth century to the present time.

The methodolgy and contents of this volume have great importance and significance for local and agricultural history. It is an outstanding example of a local history that contributes to a comprehension of the national scene. It also provides data needed for the careful depiction of the history of American agriculture, because no accurate over-all summary can be prepared until delineations of the actual stage-by-stage developments of all phases of farming and rural life in small areas representative of the main agricultural regions are available. Dr. Schmidt's study contributes greatly to this end and provides a model for similar studies.

—Everett E. Edwards

FARMERS OF THE WORLD; THE DEVELOPMENT OF AGRICULTURAL EXTENSION. Edited by *EDMUND deS BRUNNER, IRWIN T. SANDERS,* and *DOUGLAS ENSMINGER.* Columbia University Press. New York. 208 pages.

SIXTEEN authorities on sociology, anthropology, international relations, and agriculture have contributed to this symposium, the primary objective of which is the discussion of "the most effective general approach which a government or a private agency can use in helping rural people to solve their everyday problems." They offer agricultural extension as the most effective general approach to farmers' problems and then discuss extension work as related to the cultural background of farmers in the Pacific Islands, China, India, the Balkans, Latin America, the United Kingdom, Northwest Europe, the Near East, and the United States. There are more general chapters on the nature of extension, diversity and change in the culture of nonliterate peoples, characteristics of peasant societies, and Extension's role in world reconstruction. In addition to the editors, the authors include M. L. Wilson, Director of Cooperative Extension Work.

Extension is defined very broadly as shown by the following quotations from the book:

> "Extension *is* what Extension *does.*"
>
> "Extension is away-from-the-classroom education."
>
> "Extension is simply the effort to put the vital information of the agricultural scientist, whether he be physical or social scientist, at the disposal of the farmer and his wife."
>
> "Extension is an educational agency that not only helps rural people to increase their efficiency and their income but also helps to build these people themselves into understanding, accomplishing, self-confident, capable, men, women, and youth with vision and leadership."

With this broad definition of extension, which in effect covers all outside-of-the-classroom education offered to farm people, the authors emphasize that such education needs among other things to be built upon the cultural life of people, to proceed slowly because farmers are slow to change, use local leadership in planning as well as carrying out programs, use simple methods but be comprehensive in scope, work with communities and all people within them, work with families.

Methods and techniques are described in the discussion of extension work in the different cultures but the demonstration method is most often emphasized and most highly praised.

Discussion of the types of organizations, governmental and private, sponsoring extension work is necessarily brief. Little attention is given to administration except to stress the need for local participation. In fact, Drs. Wilson and Brunner say "extension teaching at its best, regardless of its administrative arrangements, is a social process, not a system or program to be administered."

Although extension is envisaged by the authors as one of the most, if not the most, fundamental need of rural people all over the world, the chapters devoted to extension work in the different countries point up also the need for more adequate credit systems, for systems of land reform, for more adequate systems of communication, of marketing, and for other more drastic and rapid methods of improving farm conditions. It is to be hoped that this book will not only serve as a challenge for the development and expansion of agricultural extension in the world but will also serve as a challenge for the development of other forms of rehabilitation and reconstruction.

—*Gladys Baker*

SLOW TRAIN TO YESTERDAY. By *ARCHIE ROBERTSON.* Houghton Mifflin Company. Boston. 189 pages.

HERE IS nostalgia, whimsy, and amusing anecdote put together with a deft touch, along with an occasional wise observation. For the reader who has railroading in his blood this is a must—for the reader who hasn't this may help explain why others have.

Not concerned with big railroad finance nor with their future in an airplane age, Robertson explored many of the nearly 400 remaining little short-line and narrow-gauge railroads and has captured the flavor of their life in recounting his experiences. The leisure, peace of mind, friendliness, become plain as the passenger is really considered an individual. On a short-line train in the South the conductor willingly stopped the train so Robertson could buy cigarettes. A railroad hotel in a western town charged a dollar a night for a room, 25 cents extra for the key. The brakeman on a western narrow-gauge road knows the birthdays of all grown-ups along the line—he can't keep up with the younger generation—and urged Robertson to return soon so they could finish their chat.

These railroads have considerable effect on the areas they serve, and vice versa. In riding the "Ma and Pa" from York, Penn., to Baltimore, Robertson soon realized why it could compete successfully with its large rival. The circuitous route through the countryside enabled the "Ma and Pa" to ship the products to and from the many prosperous farms in the area. Farmers and creamerymen in Vermont recently bought a short branch line from the bankers because the big railroad, losing money on it, was about to abandon it. Today this line is making no millionaires but is turning a respectable profit.

But the trend is in the other direction. Typical is the "Tweetsie" in western North Carolina and eastern Tennessee with declining business because there are not so many products of the farms, forests, and mines to ship, and it had to abandon passenger service after a flood washed out part of its line. There seems to be a direct relationship between the life of these little railroads and the productivity of the soil in the areas they serve. When the soil gives out they have to give up.

For the reader who has difficulty fathoming future speed in the atomic age and likes his leisure a little slower, this book will give a quiet evening of vicarious satisfaction. The photographs enhance the nostalgia and the drawings add to the whimsy. If the book isn't enough, then ride one of the trains. For a list of them, as a starter, turn to the appendix, titled "Monday, Wednesday and Friday, Mixed."

—*J. G. Riddle*

PAY DIRT: FARMING AND GARDENING WITH COMPOSTS. By *J. I. RODALE.* New York. Devin-Adair Company. 242 pages.

THIS, the first book published in America on composts, according to a note on the jacket, is a stimulating and interesting treatise on the use of compost in farming and gardening. As I read through the book I mentally concluded that it was of most value to gardeners and not to farmers in general. But when reading page 234 in the concluding chapter I read this sentence, "If I have stressed the value of compost gardening to amateurs occasionally, in this book, it is certainly not because I think the professional farmer can overlook organic agriculture; quite the contrary—this book is addressed chiefly to the general farmer."

In brief, the author makes a powerful argument in favor of the preservation and use of organic matter. He will find, I believe, few informed people who will disagree on this point. But the author goes far beyond this.

He makes rather broad promises, that composting will make the use of commercial fertilizers unnecessary, that it will prevent animal and plant diseases, that it will control weed and insect pests, that it will prevent seed from "running out," that crops grown on composted soil will be more nutritious for man or beast.

Granting that composting may help solve these problems one is not convinced that the general farmer in the United States has sufficient labor at his command to do an effective and economical job of composting.

Then, too, I do not feel that the author takes into consideration in a sufficient way the wide range of physical conditions in the United States. Little or nothing is said about the slope of the land, the rainfall, the length of growing seasons, the depths of soil, or other factors that shape our ways of using the land. It certainly would not be feasible to apply expensive compost on sloping land without protecting such land from damaging erosion. We know now that far more plant food is removed from the soil through erosion than through crop removal.

This has turned out to be a rather critical review but in reality it is an easy book to praise. I would rate *Pay Dirt* among the good agricultural books even though it may jolt many folks who have been in rather close touch with the development of agricultural science in America.

The author has a keen appreciation of the value of good food; which is an idea—amazingly enough—that is just beginning to interest a large number of agricultural scientists. He knows what good food means to the welfare of people both from the standpoint of health and a better world order. Yet, beyond all this he knows that most of our food comes from the soil and nowhere else. And while he presents the compost idea with vigor and clarity he always keeps in mind that it is but a means to a desirable end.

—*Glenn Rule*

U. S. GOVERNMENT PRINTING OFFICE: 1946

Some may think a world food plan is impracticable—a dream of starry-eyed idealists. I suggest that a plan which will open up great new markets for agricultural and industrial products and bring about a great expansion of trade is common sense and economic wisdom. If a plan which does this, and at the same time banishes hunger and malnutrition from the world and gets the nations to cooperate with each other instead of fighting each other—if this is idealism, then I say the world will be the better for a good stiff dose of idealism.

—SIR JOHN BOYD ORR

Land policy REVIEW

LIBRARY
CURRENT SERIAL RECORD
JUN 27 1946
U. S. DEPARTMENT OF AGRICULTURE

Contents FOR SUMMER 1946 *Vol.* IX, *No.* 2

		Page
Give It Back to the Indians? .	*Walter V. Woehlke*	3
Soil Science in Russia . . .	*Charles E. Kellogg*	9
National Parks Once Again . .	*Isabelle F. Story*	15
Land Reform in Germany .	*Wayne D. Rasmussen*	19
Farm Financial Planning . .	*Norman J. Wall*	23
Old Books on Agriculture . .	*Alfred Stefferud*	27
Books . .	*John D. Black, Willard W. Cochrane, James G. Maddox, Carl P. Heisig, Lois Olson, Marshall Harris.*	31

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS

Contributors

Walter V. Woehlke is Chief of the Resources Branch, Office of Indian Affairs, in the Department of the Interior, dividing his time between Washington and the West.

Charles E. Kellogg last year, together with more than a hundred fellow scientists of the United Nations, attended as the guests of the Russians, at Leningrad and Moscow, the Jubilee Sessions of the Academy of Science of the USSR, commemorating the Academy's 220th Anniversary. Dr. Kellogg is Chief of the Division of Soil Survey, BPISAE.

Isabelle F. Story works on material that many must envy—she is Editor-in-Chief of the National Park Service.

Wayne D. Rasmussen spent 10 months in Germany with the Information Control Division now of the AMG. He recently came back to his historical work in the BAE.

Norman J. Wall, Head of the Division of Agricultural Finance, BAE, has given concentrated thought to the subject he here discusses.

Alfred Stefferud will be remembered as the editor who brought this magazine to maturity. After serving overseas with OWI he has returned to the USDA to revive and reconstitute its Yearbooks.

John D. Black is well known to our readers as professor of economics at Harvard University. Lois Olson was an economic geographer in the USDA before she disappeared in OSS for overseas duty—she is back in Washington now. Other reviewers this time are all in BAE—Willard W. Cochrane, agricultural economist, James G. Maddox, economic analyst in Office of the Chief, Carl P. Heisig, the new Head of the Division of Farm Management and Costs, and Marshall Harris, specialist in land tenure studies.

LAND · POLICY · REVIEW

Land Policy Review is published quarterly by the Bureau of Agricultural Economics, U. S. Department of Agriculture, with approval of the Bureau of the Budget. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., 10 cents a single copy, 30 cents a year

Give It Back TO THE *Indians?*

By WALTER V. WOEHLKE. *The Red Men have parted with fifty million acres in the Great Plains since 1890. This author shows what has been done with this land and some of the consequences to both white men and red. He concludes with the question that in shortened form has now become the title of the article.*

THE TITLE, tenure, and use of the lands remaining in conditioned Indian ownership within the continental United States present a baffling series of intertwined legal, political, social, economic, anthropological, and psychological problems. I won't polish these facets here, but I might timidly suggest to the interested reader that he glance at two recent books, *The Hopi Way,* by Laura Thompson and associates reviewed in the fall of 1945 issue of Land Policy Review, and *Handbook of Federal Indian Laws,* by Felix S. Cohen. These volumes, a few out of many, illustrate vividly the legal, psychological, and administrative difficulties and complexities arising out of the witches' broth of Indian land history, tenure, and use.

An illuminating map of the continental United States in handsome colors is found in the latest edition of the Handbook. It shows how the Federal Government, by a series of purchases, treaties, and agreements, most of them chipped and broken, extinguished Indian rights to the bulk of the lands west and north of the Ohio, containing roughly about a billion acres. Settling of the West was a painful process—painful to both the Indians and the frontiersmen. But with certain exceptions the executive and judicial arms of the Federal Government tried hard to make the process as bloodless, painless, and inexpensive as the circumstances warranted. The manner in which the Indian nations were cleared out of the 13 original States and pushed across the Ohio and Mississippi, leaving a few red islands in the white-and-black sea, the manner in which the "Indian country" west of the Mississippi was conquered for white settlement, which all but engulfed the western red tribes, makes fascinating reading, especially when read against the lurid background of the World War II mass migrations, but the details of the process itself do not concern us here. Our inquiry is focused on the results of the process of dispossessing the Indians and the effect of these results on the national agricultural economy.

In the 40 years between 1890 and 1930 the hunger for plow land caused our enterprising farmers and speculators to take too big a bite out of the lands that remained in Indian ownership at the beginning of the period. The biggest bite was taken out of the Indian lands in the two Dakotas, in Montana east of the Rockies, in Oklahoma, Kansas, and Nebraska—all within the Great Plains area, the soil of which in the early 1930's took wing and resettled as far east as the Atlantic Ocean. In these States the Indian tribes in 1890 owned a little less than 67 million acres. By 1930 almost 50 million acres had passed out of Indian hands.

In 1890 the Great Plains Indian tribes, on the lands they held in common, were beginning to operate large herds of cattle and horses. They were adapting themselves to the livestock business; most of their farming was for subsistence. They had neither the inclination, the experience, the capital, the credit, nor the equipment to engage in commercial grain farming. And the bulk of the land remaining in their hands, after the very extensive amputations of the 70's and the 80's, was grazing land containing some of the finest range upon which millions of buffalo had grown fat. They did not want to part with any more of their remaining lands.

Gone to Others

But the lands went. Reservation after reservation was broken up by act of Congress. The individual Indians were allotted tracts of various sizes; that which was not needed for the then living Indians was declared surplus, was ceded or sold to the United States, opened to entry and sale, and disposed of to the plowman. Much of the best land allotted to individual Indians in severalty, though title was held by the United States in trust for the owners, changed hands when the silver dollars clinked and wound up in white possession.

The "plow that broke the plains" got busy on the ex-Indian land. Also on much of the land remaining in individual Indian ownership. The Indian still lacked capital, credit, experience, and equipment for commercial farming. So he leased his land to white operators for periods limited by law to a maximum of 5 years, contributing more than his share to the tenancy problem.

What would have happened if the wishes of the Indian tribes had been heeded and their reservations had not been broken up entirely? Suppose they had been allowed to keep—in the Dakotas, in Montana east of the Divide, and in Oklahoma—a total of 40 million acres instead of the 17 million acres they still have. It is safe to assume that the Indians would *not* have plowed the bulk of their land, that they would gradually have developed their livestock business. This is not a wild assumption. On the 2,000,000 tribal acres of the Pine Ridge Reservation in South Dakota more than 40,000 Indian cattle plus 10,000 horses grazed in 1910. By 1934 the tribal lands on the reservation had been broken up in thousands of relatively small individual tracts, each of them too small for an economic ranch unit. The number of Indian-owned cattle had diminished to 3,800 head and the 8,000 Oglala Sioux, without cattle, without crops, without income, were hungry. Actually hungry.

Consequence

All of the Indian reservations in the Dakotas and eastern Montana felt the fury of the drought with grasshopper accompaniment during the dry years of the 1930's. Many thousands of white farmers abandoned their holdings and moved west, but the Indians stayed. It was the home of their ancestors. These ancestors and the buffalo had survived many a dry cycle because the sod always survived and protected the soil. Isn't it possible that, if the Great Plains Indians had been left in possession of the bulk of their 1890 reservations and the plow had been largely kept out, the drought calamity and the dust storms would have been much less severe—and the weight of the smaller wheat surplus in the late 1920's would have exercised far less strain on the national economy?

The application of the 160-acre homestead law to the public lands west of the 97th meridian—nearly all of them acquired from Indian tribes—was the principal lever that pried open the lid of the Pandora's box from which emerged the submarginal land troubles, the dust storms and the distress of the 30's—troubles and distress almost forgotten after 4 years of rain, ample crops, and high war prices.

But the Indians remember.

Realization

They have realized that the transit and chain that partitioned their range lands, the plow that broke the sod on the too-small allotments, the silver dollars that induced them to part with cattle and land, led directly and inexorably to the hunger-and-drought decade. The realization of the causes of their distress, temporarily ameliorated by war-created and nonagricultural sources of income, had induced the red men to look critically at the system of land tenure and land use forced on them by the dominant race. What they have seen has caused many of them to favor remedial measures.

Let us take a closer look at the course of events on the Pine Ridge Reservation in South Dakota, scene of the Wounded Knee massacre late in December 1891, when more than 200 Indian men, women, and children were killed by United States soldiers. In 1900, Major Brennan became superintendent of the 2,000,000 acre reservation. Realizing that the Oglala Sioux were less than 20 years from the end of the buffalo economy, he fostered the production of cattle and horses. His records show that the Sioux had 40,000 head of cattle and 20,000 horses in 1910. Livestock was produced on tribal land used free principally for subsistence. After the last buffalo had been killed in the 80's, the Sioux were kept alive through the issue of rations. But by 1914 rations were merely for the benefit of the old and indigent; their livestock kept the tribesmen in health and vigor.

Step by Step

That year World War I was started. In 1915 the pressure of war prices led to the sale of increasing numbers of Indian cattle, including she-stuff. Special agents got busy allotting the tribal land in severalty to individuals. Major Brennan left early in 1917. He had kept the entire reservation for Indian livestock. The new superintendent opened the reservation, encouraged the Sioux to sell their remaining cattle, and to lease their allotments to white operators. Within a year, by the spring of 1918, practically the entire Indian range was leased to outsiders. The Indians had a brief period of cash prosperity; they lived on the proceeds of the sale of their cattle and on their rentals.

The rentals were small. At 10 cents an acre, a family owning 1,000 acres could not splurge heavily on $100 a year. When the cattle money was gone, other capital assets had to be sold. In the war and postwar years the Interior Department permitted the alienation of ever-increasing numbers of Indian trust lands, selling inherited tracts and dividing the proceeds among the heirs, granting patents-in-fee, removing the restrictions against alienation, and issuing certificates of competency.

Between 1914 and 1922 never less than two thousand tracts were sold each year. In one year more than 11 thousand tracts were sold and they contained nearly 1½ million acres.

In contrast, in 1934 only 256 tracts of Indian trust lands, containing 35,781 acres, were removed from the trust status and their alienation made possible. This number has never been reached in any one of the succeeding 10 years.

At Pine Ridge, full advantage was taken of the "liberal" policy allowing the sale of Indian lands. Several thousand parcels of the best land were sold, plowed, and planted to wheat, flax, and corn by the white settlers. The Indian vendors consumed the proceeds, usually paid in annual instalments. When these proceeds ceased, the Indians, now often without cattle, horses, and land, appealed to the Government for relief. So did the settlers when the depression and the drought hit them simultaneously.

Another Close-up

The disastrous effect of taking too large a bite out of Indian lands—disastrous to white settlers as well as the Indians—is shown by the history of the Cheyenne River Reservation, one of the eight Sioux reservations in the Dakotas. These reservations were carved out of the much larger territory acknowledged as the country of the Sioux Nation by the treaty of 1868. The Cheyenne River Reservation was established by act of Congress in 1889. It comprised 2,804,090 acres. With an average annual precipitation of less than 17 inches, farming was precarious and the use of the land for grazing was indicated.

Nineteen years after its establishment, the best part of the reservation was ceded by the Sioux owners to the United States. In 1908 approximately 1,185,000 acres were opened to entry and sale, the Indian owners receiving all and perhaps more than the land was intrinsically worth. Settlers, railroads, and the plows came onto the reservation. Big ranches, little farms, three counties, and two county seats were established. School districts were organized and trading centers were built to serve the new population.

By 1940 the 3 counties within the reservation boundaries had a total population of 9,470, of which 3,800 were Indian and 5,670 white. The white families owned about 40 percent of the land, and they leased and used more than 600,000 Indian acres. In 1939, 941 non-Indian families owned livestock worth $1,157,000; the livestock of 540 Indian families was worth $311,000. That year the total value of all farm products, sold, traded, or consumed by the 1,135 farm families of the 3 counties, white and Indian, was $660,277, or less than $600 per family. Net income was, of course, considerably lower. Hence Federal subsidies through AAA payments, FSA loans and grants, WPA and CCC work-relief projects, had to supply crutches for the tottering economy of these and hundreds of other counties in the Great Plains.

Times to Come

Conditions have improved since 1939. High war prices and ample rains have almost trebled the value of their products for the white farm families. The Indian farm families have quadrupled the number of cattle they own and have increased the value of their products in almost the same ratio as their white neighbors. For the moment all is rosy on the banks of the Cheyenne River. But—

Agricultural prices and precipitation will not always remain at their present level. When the inevitable recessions come, the agricultural income of all the families will shrink, but the Indians will be in a better position to weather the storm. They have the range resources to expand their livestock operations to 50,000 animal units a year, almost four times the present number and enough to enable 660 Indian families to run an average of 75 head per family.

Reciprocal Loss

As the Indians expand their operations to the limit of the land resources they own, white operations must of necessity narrow down. This gives emphasis to the fact that the bite of 1,200,000 acres taken out of the Cheyenne River reservation's 2,800,000 acres was too large for the Indians' good, too small for the 5,670 non-Indians. The alienated land cannot under normal conditions support the white farm population at any reasonably decent standard of living; neither can the 1,600,000 Indian acres support their owners except on a substandard level. Under conditions as they prevailed in the 1930's, neither Indians nor non-Indians will be able to stand squarely on their own economic underpinnings. Red and white will not be able to pay the cost of public services. Because of delinquent taxes and defaulted mortgages hundreds of white farms will go into county, State, or bank ownership. But the Indians will escape this particular scourge. They do not pay local land taxes and they cannot hock their trust lands. Uncle Sam is paying for the public services and is supplying credit facilities for them.

So viewing the Great Plains Indian land situation from a high hill, it appears that the oversize bite taken out of Indian holdings after 1890 not only hurt the Indians and their economy but that this big chunk also helped to bring on the national stomach ache which plagued American agriculture with its undigested surpluses clear to the beginning of World War II.

Should we give part of this big chunk back to the Indians? That question was answered affirmatively 11 years ago when the Federal Emergency Relief Administration initiated the purchase by the United States of nearly 10,000,000 submarginal acres for the special purpose of shooing the plow away and of putting the erodible soil back into grass. A small part of this submarginal acreage was earmarked for Indian use. All of this purchased land has remained in public ownership. It has been used in a way to correct the mistakes of the past, to restore the vegetative cover of palatable plants, to control accelerated erosion, to prevent further soil losses, and to build up economic units. During the war years there was heavy pressure to replow much of this and other Indian lands that are submarginal for crop production, just as there was constant demand to overstock Indian grazing lands. But with only a few exceptions, damage to the land was avoided.

The needs of the Indian and his record of land use are such that the return to him of large areas of land for grazing is indicated.

Riches

The wealth of a democracy lies in its people, not in its government or its goods. The product of democracy is self-acting men and women. The well-being and progress of society require that every citizen, of whatever age, may have the opportunity to discover himself and to make use of himself largely in his own way.

—Liberty Hyde Bailey

Russian Contributions to Soil Science

By CHARLES E. KELLOGG. *As modern soil science partly grew out of Russian studies and a Russian concept, the REVIEW has long wanted just this brief story of its beginnings and the influence of Russian scientists on its development in this country.*

THIS YEAR is the 100th anniversary of the birth of V. V. Dokuchaiev. Not many people in the world will pause to honor his memory, nor will many even recognize his name. But to a small group—at most a few hundred—he is known as the father of modern soil science.

The problems of our day are too pressing to allow us to spend much time in ancestor worship—time that might better be devoted to thinking through the maze of problems that lie ahead. What is needed is boldness of imagination—minds that seek new combinations of relationships more appropriate to our needs. Such was the mind of Dokuchaiev.

These minds see the present need *and* they grasp the experience of the past. They create new concepts woven from the strands of both time and distance—of both history and geography. Busy as we are, it is in the spirit of today's need to recall briefly how the influence of this Russian scientist and his students has meant so much to farmers everywhere. Science is international. Either this fact becomes an integral part of our basic attitudes toward the world, and we go forward to a much better life, or we destroy ourselves.

To begin, we shall need some account of early soil science. Although early man had knowledge of the responses of soils to management, few attempts were made to study soils as such, or to organize knowledge concerning them prior to the rise of modern science.

Perhaps soils were too common, too near at hand, and too close to labor in the field to interest early philosophers. Even so, the ancients (Pliny, for example) recognized that differences among the natural kinds of soils were more important to the yield and quality of crops than the usual differences in management. Yet soils were among the last of the important natural bodies to come under direct scientific observation.

Early scientists did study plants and plant nutrition, partly in response to the great pressure of an increasing population against the food supply. Speculations arising from these studies led to assumptions about the nature of soils. These were so incorrect that one marvels how long it was before someone undertook to examine the soils themselves.

For more than 50 years after the beginnings of chemistry in Europe, during the middle of the 18th century, the search continued for the philosopher's stone and for some single "vital force" that makes plants grow. In turn, came the salt theory, the water theory, the fine earth theory, and the humus theory. Each was "proved" by experiments that were misinterpreted—misinterpreted because people were looking for a single cause of plant growth.

Balance Sheet Theory

Chemistry was developing rapidly with the beginning of the nineteenth century. Analyses of plants showed that their bulk was made up of carbon, oxygen, and hydrogen taken from air and water. But the importance of other elements, like nitrogen, potassium, calcium, and phosphorus, was appreciated. Yet for years, responsible chemists argued whether plants had to take in these elements as such or whether they had mystic power to synthesize them from others.

Justus von Liebig, the great German chemist, entered the field of agricultural chemistry around 1840. With calm scientific reasoning, based upon the newer knowledge of chemistry, and, where that failed, with sarcasm and invective, he swept away notions that plants fed on humus, or that they could change water into mineral nutrients. Thus, in a sense, modern European agricultural science began with Liebig. The break with alchemy was complete.

But it was largely a laboratory science, supplemented with small field plots laid out with little or no regard to what they represented. Applications to real soils in the field were disappointing to Liebig personally and to those who had been led to expect so much from the new science. He saw soils along the Danube becoming more productive, when by his calculations they should be nearly sterile. Yet the nature of actual soils in fields, gardens, and forests remained unknown, uninvestigated, and even unappreciated.

According to Liebig's reasoning, chemical analyses of plants and soils would provide a simple balance sheet as a guide to fertilizer practice. (And by "soil" he meant only the surface layers stirred in tillage.) What plants removed, the farmers must return.

This balance-sheet theory, with its enormous oversimplification of soil-plant relationships chiefly in terms of analytical chemistry, supported by Liebig's towering personality and by his faithful followers, lasted long years beyond its usefulness. Some geologists even aided the process of oversimplification. Was not soil simply weathered rock? Thus to Liebig's simple concept of soil as a storage bin was added the simple notion of filling the "bin" with pulverized granite, sandstone, or what not. Even today many people, including some soil chemists, grasp at the balance-sheet idea. Occasionally one hears yet of "sandstone" soils or that a soil is "like a bank."

This is not the place to go into all the details of why this simple concept is not even approximately true. Of course, chemical analyses of soils, when properly made of the various parts, are useful and necessary. And the nature of the parent rock is important. But not these things by themselves.

Questions Arose

Difficulties of harmonizing the balance-sheet or storage-bin concept of soils with experience increased with the years. The discoveries of Pasteur and others led to a realization of the importance of microorganisms and reemphasized organic matter and the living portion of the soil. Then, too, explanations were lacking for the great differences in productivity among newly cultivated soils. Why should different crops respond so differently to the same fertilizer on adjoining plots? Or the same crops in different places? Why did crops low in potash often respond more to potash fertilizers than other crops rich in potash? And so on. These things couldn't be explained by the balance sheet. In fact, it was well nigh impossible to predict how one field would behave from experience with others. Farmers could only test new practices by trial and error.

In Russia

Western Europe is a region of small farms and gardens. On the whole, the soils are not highly productive by nature but are responsive to management, like those of eastern United States. In contrast, Russia is a great sprawling country, with many kinds of soil, some of which were potentially productive to begin with, like the great black lands (Chernozem).

The space of western Europe was well filled in the nineteenth century and increased production per acre was essential, even if the returns to labor were low. Russia had space. For the administration and settlement of this vast area, it was necessary to know what soils were in it. Such differences in problems likely accounted in part for the differences in soil study to meet the problems.

Dokuchaiev

A careful observer, traveling across the vast area of old Russia, could note the close relationship among vegetation, climate, and soils. Dokuchaiev was such an observer. Others, like Fallou and Richthofen, grasped at the concept of soil geography but failed to integrate it with the cycle of living organisms. Dokuchaiev regarded soils as the essential link between the inanimate mineral body of the earth and the biological kingdom, including man himself. Since there was no life without soil and no soil without life, he reasoned that they must have evolved together in a mineral-organic cycle; in fact in many cycles, because there were many unique combinations of soils and associations of living things.

Dokuchaiev was led to examine soils in the field. He found that the soil in each kind of landscape was made up of a unique series of layers, genetically related to one another and to the environment They were not confined to the surface, but were developed to the depth of living roots. Collectively, these layers, or horizons, of a soil are called its profile. The soil profiles of different kinds of landscapes were strikingly different from one another; but in the same kind of landscapes, wherever found, they were alike.

New Concept

Thus a wholly new concept of soils arose: They are natural bodies, each with its own distinct morphology; they are dynamic, developing with the natural landscape; they accurately reflect, at any moment, the combined influence of the living matter and climate, acting upon the parent rock as conditioned by the relief, over a period of time; and they are distributed over the earth according to orderly geographic principles. Within the soil itself are processes that resist change and maintain productivity.

Dokuchaiev opened a whole science to his students. With this concept, soil science, as we have it today, became possible. It is not simply a combination of other sciences, like chemistry, geology, and biology. Although techniques and principles of many other sciences are used, it has a large body of subject matter and principles that are peculiarly its own. It can be classified as a physical science, a biological science, or an earth science: it is all three.

Disciples

A vigorous school of disciples developed the new science. Much work was to be done. The morphology of the various kinds of soil had to be studied. The chemical, physical, and biological processes responsible for their development had to be worked out. Their distribution had to be shown on maps. For the first time there was a basis for planning such research and for classifying the results—for establishing scientific principles and making predictions.

After the death of Dokuchaiev (1903) the leadership fell to Sibirtsev. He was followed by K. D. Glinka, who died soon after his visit to the United States, in 1927, to attend the Congress of the International Society of Soil Science. Last year I visited the present staff in Moscow and their leader, L. Prasolov. These and many other distinguished Russian scientists have carried the work forward into all phases of soil science.

Partly because of the language barrier and perhaps more because of the very vastness of the new concepts, it was not until the publication of Glinka's textbook in German in 1914, and more especially until after World War I, that the Russian work became known in western Europe and America. Only a few references to it had appeared before.

Into America

Dr. C. F. Marbut, of the Department of Agriculture, read the German edition and immediately grasped its significance. He translated it into English, and circulated copies of the manuscript among American soil scientists even before publication. The influence was enormous. Several translations of other papers followed.

One of the most dramatic events of this period was the translation in the early twenties of the papers of the great Russian soil chemist, K. K. Gedroiz, of the same school. For several years soil chemists in both Europe and America had been studying the soil by the new methods of chemistry. Scores and scores of papers appeared, full of complicated tables giving the results of all sorts of empirical experiments with even more complicated and conflicting theories to explain them. Breaking into this confusion with a few simple papers, Gedroiz explained with easy scholarship the basic principles that made most of the previous papers useless and gave form and meaning to the others.

During the early nineteenth century workers in the United States listened attentively to the arguments over plant nutrition and soil fertility that prevailed in Europe, but they took little active part. A few exceptions could be mentioned, notably the work of Edmund Ruffin, whose *Calcareous Manures* (1821–53) contained original ideas. But most of the ideas in the United States followed those in Europe. They were even less useful here. America also had a big space. Easy migration to new and better soils in the West eased the pressure on the leached and relatively infertile soils of the East. The balance-sheet theory did not supply many answers to the soil problems of that day—in fact the problems were neither defined nor answered, as the history of settlement in the West shows. People simply settled by trial and error.

During a long and useful scientific career extending from before the Civil War until after 1900, Hilgard, at Mississippi and California, studies soils in our South and West. Independently he developed ideas approaching those of Dokuchaiev. So did Vanderford in Tennessee (1897), and later Coffey in the Department of Agriculture. Significant success, based largely on the European ideas, was achieved locally by King in Wisconsin and especially by Hopkins in Illinois.

Soil Surveys

The Soil Survey was initiated as an integral part of the agricultural research program of the Department of Agriculture, by Milton Whitney in 1898. From that time soils were studied increasingly in the United States. The old theories were still taught in the classrooms, but every worker soon found for himself that they didn't hold. As facts piled up, special theories to explain them arose—little theories that could go only a short way before bogging down in contradiction.

Facts became increasingly plentiful—hard facts—but they didn't fall into patterns that made predictions much easier. What was needed was a new generalization—a new framework within which all these facts could be assembled, classified, and remembered, and through which principles could be developed.

New Framework

This the Russian school furnished. Under the intellectual leadership of Dr. Marbut and a few others the process of creating a new American soil science began. Fortunately much had been done.

Because the new concept was so much broader, and involved so much that had scarcely been investigated at all in America, some found difficulty in grasping it at first. This was especially true of those who had confined their researches to the laboratory and field plot—who had not examined different soils in the field to the depth of plant roots, nor seen the contrasts across a continent.

Many American agricultural scientists were trained primarily in chemistry and plant physiology in the German tradition of Liebig and had little experience in the earth sciences, especially geography. They often confused the current experimental methods of chemistry and biology with the scientific method, which is, of course, much broader. Scientific correlation may not involve "experiments" at all, in the ordinary sense.

Yet the change was made rapidly because the new principles were so much more useful.

International Science

The great contribution of the Russians has not been simply the creation of a Russian soil science; rather their ideas and data contributed toward an international soil science. Americans have made great contributions and so have scientists from many lands and races. The results of research and experience on a given soil type can be applied to the same kind of soil in Canada or China, in the United States or South Africa, or in the Soviet Union or Italy—in fact, wherever such soil is to be found.

Much remains to be done. Millions of acres of land need to be investigated. But the goal is becoming clear. It is possible for every farmer to have at his command the knowledge of the whole world about his particular type of soil—knowledge gained through scientific researches and from the experience of farmers everywhere on the same kind of soil. The disasters and heartaches of trial and error can be greatly reduced, if not eliminated. New practices can be adopted promptly.

Soil scientists have learned that through international collaboration the efforts of each country are made many times more useful. Dokuchaiev may have foreseen this result. I don't know.

The United States has a unique responsibility in the world program for peace, and for the building of an expanding world economy. One of the obligations that goes along with being the richest, most productive nation in the world is that we set the pace. In this country we have only about six percent of the world's people, but we produce somewhat more than half of the world's goods. We have more than half of the power, we turn out about sixty percent of the manufactures, and ours is the mightiest, the most productive agriculture. . . . Fortunate as we are in having a highly developed, integrated economy, we cannot expect to prosper indefinitely in a depressed world. . . . United States agriculture has certain definite broad assignments, against which we should measure all of our policies, plans, and action programs.

—CLINTON P. ANDERSON

Our National Parks
Shift to Peacetime Operation

By ISABELLE F. STORY. *Good news of the land that will always be ours to enjoy is spread across these welcome pages.*

AS THE National Park Service prepares for what will probably be the largest travel year yet experienced, it looks back upon the most amazing four years in its history. When war broke on us, national park travel was spiraling upward. More than 21 million visitors had been recorded in the 1941 travel year, just about one visitor for every acre in the National Park System; and the number of tourists during the fall months indicated that 1942 would topple the '41 records.

Although of necessity park travel and development were hard hit as the Nation girded for total war, the 4 years following December 7, 1941, pointed up several interesting facts. The tenacity with which people who know the outdoors cling to their ideal of vacations in the national parks was shown by the 35,500,000 people who managed to visit them in the face of war work and travel discouragements and deterents. Best of all, the happenings of those war years proved that ownership and protection of the national parks by and for the people are woven deeply into the fabric of our national life.

Creation of national parks, monuments, historic sites, and allied areas in the National Park System established a new form of land use, one predicated upon the principle that the most scenic wilderness areas, the scientific exhibits of national interest, and the historic places connected with major events and great deeds in the march of human occupancy and progress in what is now the United States should be preserved "for the benefit and enjoyment of the people," to pick up a phrase from the act of Congress establishing the National Park Service. A glance at the record shows how successful this new venture in land use has been.

The history of "common" use of certain areas goes back to Colonial days, to the "great ponds" of Massachusetts preserved in the early 1600's. But the principle of national park establishment and use by the public is a distinct rung on the ladder of progress. The park idea as represented in Yellowstone National Park is a direct result of an exploration of that fabulous land in 1870 and of a suggestion made at the evening campfire as the party was preparing to return to civilization. And the suggestion? That the area must not be covered by private claims and exploited for personal gain; that its wonders belonged to the future as well as to the present, and to all the people, and should be preserved for the use of all. So Yellowstone National Park was established in 1872, "as a pleasuring ground for the benefit and enjoyment of the people." The precedent in conservation thus set has since spread 'round the world.

In the ensuing three-quarters of a century the National Park System evolved until now it includes 169 areas, of great diversity of exhibit, size, and location, but bound together by the universality of their national significance.

Along with growth in the System and integration of ideals and ideas of management and use, came more and more visitors to the national park areas, to relax in the serenity of high mountains, to stand in awe before great canyons that have been millions of years in the cutting and before trees that were thriving long before the beginning of the Christian era, to be inspired by the aura of endeavor and striving and achievement in the face of almost insurmountable obstacles that hovers over the areas that mark our human progress.

Primary Responsibility

Then the bombshell of war hit the national parks. After the first stunned reaction, the Service became aware that it, as the trustee for some of the finest bits of our native America, was facing the most critical challenge in national park annals. As Director Drury aptly said back in 1940, "Most of the people who visit the parks, whether they realize it or not or whether they put it into words, are impelled to visit them because of the quest for a supreme experience." To perform its traditional functions of preserving the parks that furnish this supreme experience still remained the primary responsibility of the Service.

Conversely, the Service knew, and accepted the fact, that in the final analysis victory in arms alone could save the parks, and therefore these areas must play their part in the war program, always with the principle held firmly that only if critical necessity so dictated (with no other alternative available) would material damage to the vital scenic, scientific, and historic treasures of the System be permitted.

Reverberations of War

As the war progressed, the National Park System assumed a far greater role in the war program than at first seemed possible—and happily without essential injury to its significant features. By the time the war ended, some 2,400 permits and authorizations for use by the military arms of the Federal Government and by war agencies had been issued. The parks echoed to the tread of men in uniform, to the sounds of Army tanks and trucks and artillery. Training in convoy driving on mountain roads gave soldiers an opportunity to bivouac, and frequently to rest for a day or two, in the wilderness parks. Skiing and mountain crafts were taught troops by the national park rangers. Winter equipment of various types was tried out in the park snow and ice. There were highly hush-hush communications activities in radar and radio, in enemy detection and other fields. Tactics were taught and patriotism engendered in the military battlefields which once played a bloody, yet inspiring part in shaping our national destiny. Some of the uses

Destiny

To everyone who glimpsed the country beyond the Appalachians, land was a part of the manifest destiny of Americans.

—Walter Havighurst

were spectacular; some routine. All were important in the defense and war programs.

There were moments of intense suspense, when some use threatened commercial despoliation of irreplaceable park resources, as when proposals for cutting menaced the Sitka spruce in Olympic National Park. Happily the Army, the Navy, and the civilian war agencies cooperated fully in the principles of park protection.

Healthy Reactions

Now, on the eve of the 1946 season, the National Park System has emerged intact from the period of war use, unexploited and unspoiled. The principle of land use initiated with the creation of Yellowstone National Park has been sustained and strengthened; and the National Park Service is again devoting all its energies to its primary role of providing enjoyment and inspiration to the people of today while protecting the parks and monuments unimpaired for the people of the future.

When VJ broke the back of the war, it also smashed the dam holding back travel. On came visitors in sufficiently flood-like proportions to cause apprehension. Caring for more visitors than in comparable periods during 1941's peakload, while operating on war rations and with many facilities closed, taxed the ingenuity of park administrators and rangers and concessioners alike. But the joy of the people in their newly regained right to travel stimulated park people to meet their needs, somehow.

This Very Summer

Heavy travel continues, and the 1946 season opens once again on a prewar basis with hotels, lodges, and camps in operation, and transportation systems not only conveying visitors from train, bus, or airplane to their lodgings but also featuring the sight-seeing trips that were banned during the war. Exceptions to full hotel operations are the Ahwahnee Hotel in Yosemite National Park which has been used as a Naval convalescent hospital and will not be rehabilitated in time for use this summer; and possibly the Wawona Hotel in the same park, which is awaiting replacement of fire-destroyed refrigeration equipment before its opening date can be set. Free automobile camps will be operated by the Federal Government as in the past, the major camps having individual sites for car with adjacent fireplace, picnic table and chairs, and running water. There also are trailer camps with individual campsite treatment, but without electrical outlets.

Administering the national parks and monuments "for the benefit and enjoyment of the people" is interpreted to mean that the Service is obligated to assist the public, so far as personnel and funds will permit, in deriving from their visits the deeply satisfying experiences that may be had in areas of their types. In the wilderness parks enjoyment of the breathtaking scenery is paramount; but there also is the enjoyment to be gained from such recreation as fits into the serene picture, whether it be passive or active. Touring the parks by horseback or on foot and climbing their more accessible peaks gives one the feeling of conquering the wilderness and brings a satisfaction difficult to obtain otherwise. For those not able or inclined to strenuous exercise, roads lead to some of the major features of interest. Fishing is always an exciting sport. Hunting is prohibited by law in these wildlife sanctuaries, but "hunting with the camera" is one of the most popular diversions—many a former big-game hunter has discarded his gun for a kodak.

To enjoy the national parks to the highest degree an understanding of their purposes, the why and wherefore of creation of the natural areas, and the significance behind the historical units, is necessary. To this end an interpretive service has been organized. It operates through guided trips long or short, illustrated talks at evening campfires in hotel or lodge lobbies, and museums. The museums, unlike their city cousins, are not an end in themselves. They serve as indices to the rich exhibits of the national park areas, which are themselves the museums of nature or history, as the case may be.

The visitor may take his parks as actively or as restfully as he wishes; may seek interpretation or bask in the sunshine; may go through quickly or be lucky enough to loiter along the way. No matter how he goes, what he does, or how long he stays, he will derive his share of "benefit and enjoyment" from the best of America preserved in the National Park System.

Wholeheartedly

Let us recognize frankly that freedom from gripping want is a basic component of any enduring peace, and that if the world is to have any hope of lasting peace and a stable economy we must all cooperate wholeheartedly to the end that the liberated peoples are restored as rapidly as possible to a self-sustaining basis.

—HERBERT H. LEHMAN

Land Reform in American-Occupied Germany

By WAYNE D. RASMUSSEN. *This article, written from the viewpoint of possible German action, is based upon texts that are available to the public, but apparently the material has never been brought together in this way. The newspapers cited were published in Germany for general distribution and copies were sent to the Library of Congress, the New York Public Library, and other libraries in this country. The campaign posters were posted in public places in Germany with the approval of the Military Government. The political party programs mentioned, and not otherwise identified as to source, appeared in issues of German newspapers, several of which were brought back to this country by the author.*

THERE ARE STILL many large landed estates, mostly feudal in origin, in the section of Germany occupied by the American army. These estates and the possibilities of a general land reform have been the subject of considerable discussion in newspapers and political party programs. The discussion has increased since the announcements by provincial German governments in the Soviet-occupied zone that land reform has been completed there on the general basis of the subdivision of large estates into 12-acre tracts.

American-occupied Germany is divided into three states, Greater Hessen, North Wuerttemberg-Baden and Bavaria, each headed by a German government. These state governments have been delegated certain powers under the supervision of Military Government and are the highest German authority in the American zone. Any immediate action by the Germans towards land reform would necessarily be undertaken by the state authorities. The first of the state governments to take up the subject publicly was that of Greater Hessen which began work on the problem late in 1945.

The first announcement of the work being done was made in the November 28, 1945 issue of the *Wiesbadener Kurier,* a German-edited newspaper published, as are most newspapers in the American zone, under a license granted by the Information Control Division of Military Government. The paper quoted the German Minister of Agriculture of Greater Hessen as saying that the problem was important and should sooner or later be handled uniformly throughout Germany. The Minister announced that there were about 1,100 landed estates of more than 247 acres in Hessen and that these estates comprised about 40 percent of the area of the state. However, only 7 percent of the agricultural land is in the estates; the remainder of the large holdings is in forest and nonagricultural lands.

On the same date, November 28, 1945, the *Darmstaedter Echo* published an editorial approving the idea of land reform. The author said that the problem was political and that a satisfactory solution would be one means of improving the food situation.

In its issue of December 1, 1945, the *Rhein-Neckar-Zeitung,* published in Heidelberg, featured an article calling for land reform in Baden. Its writer thought that the need for the subdivision of large estates in Baden was not so obvious as in certain other areas but that it was nevertheless a very important objective. Statistics for Baden as a whole, including both the American and French-occupied zones, showed 254,938 owners of farm lands. Of these 61 percent owned less than 5 acres each; 24 percent owned between 5 and 12 acres; 13 percent owned between 12 and 49 acres; 2 percent owned between 49 and 247 acres; and 0.23 percent or 594 families owned 247 acres or more. These 594 large landowners held 482,571 acres of land, while the 154,607 smallest owners held only 262,193 acres. Several of the largest estates and their owners were listed by name. The writer did not point out that only 5.7 percent of the total farm land in Baden was in estates of over 247 acres.

Three principal reasons for promoting land reform were advanced. The first was political. This writer said that the large landholders had always been a force for reaction and militarism and now the country had a chance to suppress this force by democratic means. Second, the subdivision of estates would add to the short food supply by bringing uncultivated land into production. Third, land would be made available for the many farmers who had very small plots and for refugees from the east.

Under the plan advocated, distinctions would be made between certain types of large owners. Lands owned by war criminals and by active Nazis would be confiscated. While the point was not mentioned in that article, the opinion often expressed by interested Germans is that the lands owned by proven Nazis should be confiscated without payment while the lands owned by non-Nazis should be paid for over a period of years. The writer of this newspaper article would exempt three types of estates from confiscation—model farms, estates devoted to seed production, and church lands.

He believed that the estates should be subdivided into grants of single plots between 15 and 20 acres in size and that persons receiving land should be free to work it on an individual basis, but facilities should be made available for working on a cooperative basis when that was the wish of the new proprietors.

A week after this article appeared, a news story in the *Stuttgarter Zeitung* contained a brief comment to the effect that it was hoped the proposed land reform would aid the production of food and would afford space for the refugees from the Sudetenland and Silesia.

Readers' Letters

Other newspapers have printed letters from readers calling for land reform. The writer of a letter published in the *Frankfurter Rundschau* in December 1945, had noticed an advertisement of a large estate for sale; he wrote that such an estate could not be bought by a small farmer or farm laborer, but only by an owner of a large estate or by a person who had built up a fortune by war profiteering. These classes, he said, were the ones that led the nation to war by holding all of the land in a tight grasp and then saying to the common man: "You are without room. Why don't you seize the lands of neighboring nations?" He then stated that land reform is as necessary in western and southern Germany as in eastern Germany; that the most important step toward recovery is the liquidation of the large landed estates.

Political Platforms

The interest shown in the public press was reflected in the platforms of the leading German political parties during the campaigns preceding the January elections. The four leading licensed parties in the American zone taking part in the elections were: the German Communist Party, the German Social Democratic Party, the Christian Democratic Union (in some areas called the Christian Social Union), and the Liberal Democratic Party. A fifth, the Democratic Peoples Party, was active in some areas and has a program similar to that of the Liberal Democratic Party. Platforms of the parties were presented to the German people by wall posters, by speakers at rallies, and by the newspapers, which at the present time are nonpartisan and committed to giving equal coverage to all licensed parties.

The Communist Party is the most ardent advocate of land reform. It attacks the owners of large estates as opponents and saboteurs of a truly democratic development and calls for parceling out of the feudal estates in order to eliminate this force from German life. But the land reform must in no circumstances lead to a decrease in production. It is often emphasized that land reform is not a radical action but the correction of an ancient wrong since the land should belong to the people who work it and feed the population. The party in Bavaria prepared a pamphlet entitled "The Communist and the Peasant" and hopes to gain considerable support in this traditionally conservative area. A party spokesman in Frankfurt has outlined a general plan. The program would be undertaken by a committee of farmers, officials, and specialists. Land belonging to owners possessing more than 247 acres (100 hectares), war criminals, and active Nazi party members would be requisitioned without payment, but land belonging to the churches would not be seized. The expropriated land would be distributed in 20- to 30-acre tracts to farmers who own less than 12 acres, to landless peasants, farm workers, and refugees.

The Social Democratic Party is strongly in favor of land reform but has not formulated a policy for implementing the program. A campaign poster in Bad Nauheim called for "control of the large landowners and the requisition of ground and soil for settlers." At a regional conference in Kassel in December 1945, a resolution was adopted which called for the division of large landed estates. These attitudes are voiced generally by party leaders throughout the American zone; disagreement comes as to how the policy will be carried out. More sentiment is expressed for compensating the large landowners, provided they were not war criminals nor active Nazis, than in the Communist Party.

The Christian Democratic Union is generally considered to be more conservative than either the Communists or Social Democrats in the matter of land reform but there are divergent opinions within the party on the subject. The official stand of the party was expressed in resolutions adopted at a meeting in Bad Godesberg in December 1945. The resolutions stated that to insure a free agriculture, cooperatives should be built up and agricultural and gardening settlements should be founded to offer the greatest number of Germans their own soil and self-sustaining work. On the other hand, a campaign poster appearing in Bad Nauheim was worded: "You farmers, do you wish that your farm-yards, your fields, and your livestock remain your property? . . . Vote for the Christian Democratic Union!" A party spokesman wrote in the *Rhein-Neckar-Zeitung* in January 1946, that there could be no excuse for a land-reform program which would put a greater strain upon the already strained economy and not definitely solve the problem, but that the Union was working upon a plan that would attain an economic and socially efficacious order.

The Liberal Democratic Party and other rightist parties have had little to say on land reform. One published statement of policy reads to the effect that the need for land by refugees coming into Germany offers a chance for a reexamination of land division on the basis of established land rights, but that necessary land reform cannot be effected by the confiscation of land without compensation.

Prospects

It appears from the campaign promises and opinions expressed by leaders that should the German Communist Party or the Social Democratic Party come into power, a real effort will be made to carry out some type of land reform which will include the subdivision of the large estates. Should the Christian Democratic Union come into power, there may be some steps toward land reform but the results may vary from area to area and on the whole remain comparatively unimportant. Should the Liberal Democratic Party come into power, any readjustments in land holding will be made along traditional lines.

The results of the first free election in Germany since 1933, held in smaller communities and rural areas in January 1946, indicated that the Social Democratic Party and the Christian Social Union in Bavaria were the strongest parties. The Social Democrats, as a rule, received a plurality in urban communities and had a substantial lead in Greater Hessen. The Christian Democratic (or Social) Union was predominant in rural and Catholic areas, being especially strong in Bavaria and North Baden. The large independent or minor party vote (as high as 50 percent in North Wuerttemberg) obscured the significance of the voting as an index of sentiment on clear party issues such as land reform. The only majority anywhere was of the Christian Democratic Union in North Baden.

It is doubtful that the voting was influenced by the stands of the parties on the question of land reform but public opinion may make it a true issue in the future. Certainly the present time of economic stress and reorganization offers advocates of land reform in Germany the best opportunity for action they have ever had.

Financial Planning FOR *Farm* AND *Family*

By NORMAN J. WALL. *What shall we do with our wartime savings? Shall we keep or spend them? And spend them for what? These questions are frequently asked farm leaders everywhere. So we asked the head of our work in agricultural finance for his answers. Here is his reply.*

SELDOM have farmers in such large numbers had the opportunity of putting into operation sound plans for their future financial security.

As a result of the wartime expansion of incomes and the scarcity of purchasable goods, farmers now hold about 17 billion dollars worth of liquid assets—bank deposits, currency, and war bonds. Further, rising values of land and personal property accompanied by reduced indebtedness have increased substantially farmer equities and borrowing power. Sound decisions concerning the use of funds—arising from current income, savings, or new loans—are vital to the future financial security of farm families. Unsound decisions may lead to the wasting of liquid assets or may even involve new and grave financial risks.

After World War I, attempts by farmers and others to pyramid wartime profits by buying additional land, by ill-considered investments in high-priced equipment and livestock, and by other unsound ventures, built up an excessive volume of both real estate and non-real-estate debt. This high level of indebtedness based on temporarily inflated income prospects was the source of acute financial distress following the collapse of the wartime level of farm prices. To avoid repeating the mistakes which followed the close of World War I, farm families will now need to look ahead and determine with care their future financial policies.

Despite the fact that the majority of farmers are in a better financial position than at the beginning of the war, the accumulation of sizable individual savings has been very uneven. It is probable that for most farmers the various desirable types of expenditures for the farm and home will involve funds in excess of those they will have available. Careful planning will be required to budget expenditures from savings, income, and new loans to obtain the maximum future benefits. No single set of rules or principles may be set up which will be applicable to all farmers. In general, however, farmers' financial policies may properly be aimed at one or more of these objectives: (1) Improved or stabilized income prospects, (2) greater financial security, and (3) higher farm-family living standards.

Improving Income

Farmers were wearing out plant and equipment without being able to make adequate replacements during the war. Even before that, in many areas farm income was so low that the farm plant could not be maintained on an efficient basis. As the farm must provide the income to meet operating expenses, retirement of debt, and family living, it is obvious that in many instances the expenditures for repairs and replacements to keep or to place the farm on an efficient basis, should have the first call on savings and current income. Where the farm is too small to provide an efficient operating unit, the purchase of additional land likewise may be desirable. Most farmers will also find it profitable to get improved types of seed and of livestock. In general, these various expenditures should be made to obtain the best combination of resources—land, labor, and equipment—to obtain the lowest possible production costs.

With land prices at high levels in most areas, expenditures for improving or stabilizing the income prospects frequently will bring better returns than the purchase of unneeded additional land. The significant increase in farm output during the war has taken heavy toll of soil resources. Expenditures for lime and fertilizer to restore and increase the productive capacity of these farms will prove to be a sound investment. The practices that have been developed in recent years for building up the carrying capacity of pastures have demonstrated that expenditures for pasturage improvement can materially stabilize and increase the farm income.

Capital investments in other types of soil conservation may not only be profitable but in many cases are essential to maintain the income-producing capacity of the farm. The reference here is to such measures as contouring, terracing, strip-cropping, grass waterways, tiling or open-ditch drainage, and irrigation where needed.

The increased returns that may be expected from such investments are indicated by a recent Illinois study which reported (in Illinois Farm Economics Nos. 129 and 130) that "The following of a complete conservation plan, * * * plus the efficient use of the legumes and grasses through livestock, returned, at present price levels, $589 a year above the nonconservation system of farming on the equivalent of a 160-acre farm in McLean County, $720 in Madison-St. Clair Counties; and $892 in Stephenson, Jo Daviess and Winnebago Counties."

In those areas where reoccurring periods of deficient rainfall appreciably reduce annual crop yields, farm income can be increased and stabilized through provisions for the storage and maintenance of adequate feed reserves. Such reserves will materially offset the risks of crop failure with the resulting inability to continue or complete a livestock-production program. At the same time it eliminates the additional costs, such as from transportation, incident to the purchase of feed that normally may be produced in whole or in part on the farm.

Financial Security

Of first importance to farmers with heavy burdens of debt will be the reduction of these obligations to manageable shape. Fortunately, farmers during World War II generally have followed a sound policy of reducing their debts which is in sharp contrast with the increase of debts during World War I. Farm-mortgage indebtedness increased from about 5 billion dollars at the beginning of 1915 to 8½ billions in 1920. In a similar 5-year period during World War II farm-mortgage debt decreased from about 6½ billion dollars to slightly more than 5 billions between 1940 and 1945. Short-term indebtedness which more than doubled in the 5-year period of World War I remained relatively stable during the comparable period of World War II. However, as compared with 1920 we are now in a period when forces for building up of debt are still active.

Despite the marked reduction in debt during the latter war period, large numbers of farmers carry debts that are high relative both to the value of their assets and their income prospects. This is particularly true of those with little capital of their own who have just started farming or have expanded in the war years of high prices. For these farmers the use of surplus income for the reduction of this indebtedness to the level of the long-time income capacity of the farm will generally be preferable to most other uses.

With the relatively low level of income in many areas before the war, most farmers had a very narrow margin, if any, between returns and expenditures. As the result of their wartime savings, many of them now have a comfortable feeling of economic security. Many farmers will wish to hold at least a part of these savings as a buffer against any readjustment in income that may develop with the probable shrinking and shifting demands for food and fiber. After the postwar-adjustment problems become clearer, these reserves, as well as unused borrowing power, may be needed, in whole or in part, to facilitate adjustments. Furthermore, just as corporations normally try to maintain some reserves in cash and marketable securities to fall back upon in meeting fluctuations in business activity, farmers will enhance their future financial security through the more permanent maintenance of special emergency reserves. Readily realizable assets, such as war bonds, provide good liquid reserves for meeting unpredictable emergencies — low prices, crop failures, accidents, and other hazards of the farming business.

For those farmers who are approaching the retirement age, a carefully worked-out retirement plan may afford a suitable outlet for savings. Such a plan may include a retirement home on the farm or in a nearby town. When a son is in a position to take over the active farming, partnership arrangements may be made to assure an income to the retiring farmer and, at the same time, enable the son to build up an equity in the farm enterprise. By such an arrangement the son could profit from the managerial experience of the father who has developed the farm over many years.

Insurance

The purchase of life insurance and annuities also provides a means whereby the farmer—as well as the city man—may add to the economic security of his family and himself if he has surplus income or funds. Through these purchases he can provide for the payment of debts and taxes, for the continued operation of the farm in the event of his untimely death, and for a future income for himself if he lives to old age. The insurance contract can provide protection for dependents, relief from premium payments in case of disability, and an income when the income-producing ability of the farmer is on the wane.

Although the interest earnings allowed by insurance companies are not high, their investments are made reasonably safe through diversification, and the insured does not have to choose between investments. Insurance or annuities bought by periodic premium payments begin to earn interest immediately. There is no loss of interest while enough money accumulates to be invested elsewhere.

Improved Family Living

In making financial plans for the future, the needs and wishes of the family should be carefully considered. The farm financial plan should recognize that the farm is not merely a very necessary income-producing property but is a home as well. The home should have, so far as reasonably possible, such conveniences and comforts as will make it attractive to the whole family.

Serious lack of modern household improvements on our farms is indicated by Census data. The problem of keeping a desirable number of children on the farms and of attracting satisfactory farm workers will not be eased until there is a reduction in the disparity between farm and city homes in the way of conveniences and comforts. Running water in the kitchen and bathroom should rate high in any priority for farm-home expenditures. Electrical connection and equipment for the home and central heating add greatly to the comfort. These and other home conveniences contribute much to efficiency as well as to the satisfaction of the whole family.

Finally, and by no means of least importance, is the provision in the budget plans for expenditures to maintain and improve the health of all members of the farm family and to provide adequate education for the farm children.

HUNTING *Old Books* ON *Agriculture*

By ALFRED STEFFERUD. *Many of our readers will welcome this little story that was brought us from England by the previous editor of this magazine.*

I BECAME a Collector of old books on husbandry the day I met Mr. Long. Up to then I was just a collector.

It started about the time I was learning to read, when a neighbor who was moving away left a box of books on our stoop. My part of that windfall was a handful of pamphlets, farm publications from Washington and St. Paul. They had brilliant pictures in magenta and cerise showing diseased livers, before-and-after plant ailments, and such. I could not read them, but they kept me in thrall a long time.

Then came, from where I know not, a small book on gophers. Every time I had the grippe I struggled with it, for want of something else. I remember it fondly as the dullest book I have ever encountered; having learned so young what the nadir is, everything else since has been comparatively interesting.

But to get to Mr. Long, I must pass lightly over the intervening years. High-school Vergil was good enough to make me want to own my own copy of the Georgics, that well-spring of rural poetry, fancy, and fact at which have drunk, sometimes with a nod of thanks but oftener without, writers and practitioners of farming these many centuries.

Wise, eclectic Columella (who wrote that golden sentence: "But agriculture alone, which is without doubt most closely related and, as it were, own sister to wisdom, is as destitute of learners as of teachers.") was one of the first of these. You can move forward and backward with Columella as a fulcrum and discover a corporation of great minds at work and play, each copying or improving on another, and all of them, particularly when writing from direct observation, pretty durable and correct, even in an age that knows 2,4-dichlorophenoxyocetic acid.

Cato leads that shining parade. His recipe for preparing ham is still read and enjoyed, if not followed, by contemporary Virginia ham fanciers. Near him stand Varro, whose self-assured, delightful dialogues not even a murder can interrupt, and, among others, the men that Varro and Columella often quote: Scrofa, the two Sasernas, father and son, and Stolo.

A goodly, forthright company, they, who spoke out clear and strong on problems that today engage the *Country Gentleman, Farm Journal, The Land,* and many another: How to plow on a slope, where to put your farmstead, how to treat your neighbors, what to do on holidays, the handling of manure and soil, hired men and overseers, new equipment and methods of tillage, the time to plant, the care and joys of keeping bees, and, above all, the pleasures and disappointments of life in the country.

One thing leads to another, you see. You happen on Vergil, range into Hesiod, Reitzenstein and the "lost books," and, as a change from the Ancients, happen on their charming copyist, Gervase Markham.

Then you are off again, exploring the British bucolic writers of the eighteenth century and earlier, discovering their debt to the glory that was Rome (for example, the Latins' accounts of how a Moorish mare was impregnated by the wind, or relative merits of brown and black animals), wondering why so few farmers are writers, making side excursions into typography and fine presswork, and delving into the pleasant fields tilled today by Gove Hambidge, Russell Lord, Robert Frost, H. J. Massingham, E. B. White, Clare Leighton, and some others, all of whom love the soil but who, unlike their counterparts of other generations, write with more urbanity, more wit, and more common sense.

Even in War

I was thus exploring, discovering, and delving, in wartime London, still a mere collector, when I first heard about Mr. Long.

Part of my work, I should explain, was in Grosvenor Square, in what had become an Americanized West End. The other part was in Bush House, hard by Fleet Street and the section that Dickens and Johnson knew. In between, easily reachable at lunch time, lay my zone of exploration, New Bond Street, Tottenham Court Road, the Museum, Russell Square, Berkeley Square. The bookmen there yielded (besides information about Mr. Long) much for soul and thought. I learned a great deal about the history of agriculture in this process of browsing and buying. I saw another aspect of the blitz the Londoner survived, with integrity intact. I came into possession of some cherished volumes—Markham's "Inrichment of the Weald of Kent"; Walter Blith's "The English Improver Improved"; John Worlidge's "Systema Agriculturae"; Mortimer's "The Whole Art of Husbandry"; R. Bradley's "The Country Gentleman and Farmer's Monthly Director"; and several by Arthur Young, the over-rated (as far as I'm concerned) friend of Jefferson.

And not only books. I got a new conception of agriculture as a philosophy universal and eternal, which every generation discovers anew. I got a new respect for bookselling as a profession, especially as practiced by the British, by knowledgeable, friendly firms like Thomas Thorp, Maggs Bros., Quaritch, David Low, and a half dozen others, who respect books.

David Low's engaging Miss first told me about Mr. Long during my third or fourth visit to Cecil Court. "You know," she remarked one day, "if you are interested in old agriculture, the man to see is Mr. Long; he lives in Esher." She had seen his card in a book dealers' journal, but she could give no further vital data about him. I found out later that Esher is in Surrey, not far from London, and I could easily get there by train.

One bright fall day I started for Esher, feeling, with some excitement, that something was ahead of me, that I would be testing a germinating theory that the difference between a Collector and a collector is one of intuition about whether to buy a book and where wanted books are to be found, almost without looking.

On the Search

Thinking I might save a wrong turning, I asked at the Green Man or Spotted Cow, or whatever the pub near the Esher Station is named, how I could reach Mr. Long's shop. The Miss there did not know, and the pooled thoughts and guesses of everybody in the place produced only the suggestion that the stationer up the road might know. After all, I reflected, I couldn't expect persons in a public house to know about book dealers.

The stationer was of no help: He knew of nobody named Long. There was no antiquarian bookseller in Esher, he was sure—in fact, there was no book shop at all.

Across the way was a real estate office. There, surely, would be some kind of directory. There was, and it listed the name Long. But there were two of them, and both named H. C. Long, without hint of work or profession. I was about to flip a coin, when the Miss suggested it would be quite easy and time-saving, really, to reach one of them, the one that lived in Manor Road. If he were not the one I wanted, she said brightly, I could then concentrate on the other H. C. Long. Just take the bus outside, she said.

The bus had charged along a mile or two when the lady conductor reached me. I tendered a shilling and my desire to get to Manor Road. Manor Road? she repeated. Manor Road? There's no Manor Road around here, not on this line at least.

This had gone too far, I told myself. David Low's Miss or no David Low's Miss, there is no specialist in husbandry in Esher or Surrey. The whole thing is silly, when there's a war on. I left the bus, to get one for the return to Esher, at a small stationer's shop. I looked idly over his few books, and he asked me if I had anything particular in mind. No, I replied; my interest was in older books—husbandry, to be exact. His face lighted up.

"Oh," he exclaimed, "the man for you to see is an old friend of mine. He lives at the top of this road; he has an excellent collection of books on agriculture. His name is Long."

He paused: "But you've come at the wrong time. Mr. Long isn't at home these days. He's retired, but he has taken a war post in London, and is available only on Saturdays."

Still Farther

Well, I reflected, I'm this close; maybe somebody is at home; maybe I can see the books at least. So I went to No. 10 Manor Road and rang the bell.

A good, gray man, with a pipe, came to greet me. I stated my business; I was looking for Mr. Long, but since he is not at home, maybe I could see the books?

"I am Mr. Long," he replied. "I happen to be on leave this week. I'd be glad to show my books."

In the Garden

In the pleasant little garden house he had built for his books, Mr. Long and I talked about men and farming and books all afternoon: Farming in a Britain at war; the new great men of the earth like Russell, Gilbert, Lawes, and Bennett; Rothamstead's hundredth anniversary, and what it means to have research planned for a hundred years, not for the next election; how easy it is to spot the artificial in writings about the country; the recurrence every once in a while of a great public preoccupation with some aspect or other of farming, such as plowing—vide Columella, Jethro Tull, Thomas Jefferson, and this very day in America. I learned that for years Mr. Long had held an editorial post in the Ministry of Agriculture much like the one I had in the Bureau of Agricultural Economics; now he was on the staff of a country magazine in London. His collection was the hobby of a lifetime; now he was selling duplicate copies and such.

We talked at length about Jethro Tull and horse-hoeing husbandry. That was one of the landmarks of agriculture that I did not have; a good early edition was almost as rare as Thomas Tusser's "Pointes of Husbandry." All I had been able to get was Cobbett's version of it. Did Mr. Long have a copy? No; he had not seen one in years, but he would be on the alert for one for me.

We had come to the inevitable subject of wartime food and rationing when Mrs. Long came to tell us tea was ready.

I shall never forget that tea. There was cake, good cake, but I was impressed more by what it meant than the cake itself. The cake meant months of scrimping and planning and doing without, and I knew, although there was not the slightest hint for me to go on, that it had been baked for the son in service who would be home on leave the following day. For all they let on. Mr. and Mrs. Long had cake like that every day.

Time came for goodbyes and to tuck in my briefcase the books I had bought. But you can't say goodbye to people like Mr. and Mrs. Long; you know that even if you never see them again there will always be strong ties of affectionate, respectful memories. And thank you, for such an afternoon, can never be said in the way one wants to say it.

Yes, I decided on the way back to London, my theory was correct.

And Then—

Two months later I was packed, ready to start for home. The very last afternoon in London, when I returned to my flat from completing last-minute odds and ends to gather up my luggage, I found a note under my door. It was from Mr. Long. He thought he had located a Tull; a friend knew a man who had a copy. Did I want it? My answer went right back. Yes, I wrote, get it if you can and it doesn't cost too much, and mail it to me at home. Not long ago it came.

Where can I get a copy of Tusser?

Books

Managing a Farm. By *SHERMAN E. JOHNSON AND ASSOCIATES.* D. Van Nostrand Company, Inc. New York. 365 pages.

IN THIS VERSION this book is designed especially for use by actual farm operators and by prospective farm operators of family farms and part-time farms. In its original form it was to guide young men in the services in planning possible future careers in farming. The direction given to it by this original purpose has been offset sufficiently by revisions and added chapters to make it in its present form a well-balanced and orderly presentation of the problems of farm management viewed from the standpoint of a farmer already on his own farm.

The authors speak of their book as designed to give "practical guidance in thinking through the management problems on a full-time family farm." This is an admirable statement of its objectives and approach. It does not undertake to lay down rules for success. Instead, it shows in simple terms how to analyze all the major types of problems that arise on family farms, and then for good measure adds an excellent chapter on the special problems of part-time farms. Simple but highly useful forms of records are presented, and forms of tables of receipts and expenses to construct in testing out the probable returns from alternative farm organizations. The data included in a limited number of carefully selected tables—such as those giving the rate of depreciation and duty of machines, or average day's work of an experienced farm hand—are intended to be illustrative rather than to serve as direct aids in actual farm planning, for it is realized that averages of this sort do not fit the actual farming of any particular region or area. The term "requirements" is used sparingly throughout the book.

Older readers will remember that workers in the Bureau of Agricultural Economics, along about 1924, put together a little book under the title *Practical Farm Economics,* which was issued as a public document. They hoped that it would be widely used by operating farmers. It wasn't, and was soon forgotten. Will this one suffer the same fate? This reviewer expects it to fill a much more important role. This one any farmer with a high-school education, *or its equivalent,* can read and still get a good deal out of, in the way of new ideas and new ways of thinking about his problems. As a matter of fact, if he really thinks his way all the way through this book, he will have acquired more economics than is now taught in some of the present college courses in farm management. Much of it he will absorb without knowing that it is economics, for this book is remarkably free of the usual jargon of economics.

—John D. Black.

THE ECONOMIC MIND IN AMERICAN CIVILIZATION 1606–1865. By *JOSEPH DORFMAN*. The Viking Press. New York. Two Volumes.

IT IS NOT often that a person has the opportunity to review a truly great work such as this one. Joseph Dorfman has written a complete and thoroughly documented account of the prevailing climate of economic opinion from the earliest colonial times to the Civil War, as expressed by the "expert," the legislator, and the man of business. It is a source book to which all persons working in the social sciences will want to turn for information concerning the growth and development of economic institutions, common economic problems, and the writing of early economic thinkers in American civilization.

But this two-volume work is more than a source book. It is a well-told story. And from reading this historical story one cannot help but gain or improve or focus more sharply the most important single analytical tool for dealing with social problems—namely, *perspective*. The social problems of today, and our apparent inability to cope with those problems, seem less depressing after one has read this account of the never-ending bickering and quarreling of our predecessors over economic issues—most of which were never settled satisfactorily.

We simply made "progress" moving from one failure to the next, and I say progress because over the long period, 1606–1865, the individual life of the poor as well as the rich was increasingly dignified. At the time of the first colonizations human rights were nonexistent when they happened to conflict with property rights. Whereas by 1865 "gentlemen of quality" were no longer arguing openly that the economic order existed exclusively for their private benefit, we had fought and won a war that made it impossible for one man to *own* another man, and certain of the conservators of the existing social order to be found in the academics of higher learning were inclined to believe a little education of the masses might be a good thing since "It is necessary that 'a sacred regard for property in all its manifestations should be early instilled in their souls.' "

Mr. Dorfman does not build this sense of perspective by telling the reader that perspective with regard to social and economic problems is what he needs. He does it by working through the profusion of opinions and arguments advanced by the obscure and the prominent men of the day who concerned themselves with the economic problems which arose betwen 1606 and 1865. To lend body to this review let us look at some of these problems. The most persistent and disturbing problem of the colonial period from Massachusetts to Georgia was the lack of specie (hard money) upon which to base or facilitate trade and commerce in the developing country. English specie would not flow in readily, because the colonies were always in a debtor position on a net basis. The colonists tried to remedy this lack by issuing all types of paper money and by using foreign (non-English coins), but never did they find a real solution to their problem—never were they able to establish and maintain an adequate money supply to carry on trade among themselves.

Second to the perennial shortage of money, was the short labor supply in the colonies—particularly skilled workers. Wages of free labor were held high by the short supply, thus creating a situation in which there was constant agitation for wage controls of one type or another. To circumvent the short labor supply the southern planters turned to the importation of black slave labor and the northern colonists to indentured servants. But indentured servants in the northern colonies were never forthcoming in the quantities deemed adequate by the men of commerce—always the cry was for more and more indentured servants.

In the early national period the controversy over the public debt created by the Continental Congress during the Revolutionary War held the center of the economic stage. Should the Continental notes be honored at face value by the new Government or at their going commercial rate? That was the question which raged through the thirteen States. Closely related to this problem of the public debt was the question of a national bank to aid the Federal Government in its financing operations, and to help establish a "sound" and adequate money supply. This national bank question raised in the Washington Administration nearly tore the Jackson Administration to shreds, and was still a live issue in the Lincoln Administration.

But new problems peculiar to a new and struggling nation were thrown up in the early 1800's—protectionism vs. free trade, the issue of internal improvements, and slavery. These new questions had serious sectional implications. For example, the Middle Atlantic States were strong for tariff protection since manufacturing was developing in that area, whereas the Cotton South defended with equal vigor the free-trade position. And with the development of the West the advocates of free labor and the advocates of slave labor met head-on and, as we know, they found no solution to their problem except in war. In sum, the economic history of this country during its first 250 years was trying and turbulent. Many economic problems of today are not new, and most are not more difficult than those of a century or two centuries ago; they are simply the problems which a people striving to achieve a maximum of individual freedom must expect to meet at each new turn of events.

The only real criticism of Mr. Dorfman's work is that it ends with the year 1865. However, the author promises a second manuscript which will fill in the gap between 1865 and, say, 1945 in the not-too-distant future. In the meantime this reviewer would make the suggestion that every person working with current social problems spend some time, valuable time if necessary, to relive the economic trials of early Americans as described in The Economic Mind in American Civilization 1606–1865.

—*Willard W. Cochrane.*

AGRICULTURE IN AN UNSTABLE ECONOMY. A RESEARCH STUDY FOR THE COMMITTEE FOR ECONOMIC DEVELOPMENT. By *THEODORE W. SCHULTZ.* McGraw-Hill Book Company. New York. 283 pages.

THIS BOOK will interest a wide range of readers. Professional economists will want to have the latest views of the professor of agricultural economics at the University of Chicago. Businessmen will want to know what the C. E. D. research staff is thinking about agriculture. Legislators, writers, publishers, farm organization leaders, and many others concerned with the perennial "farm problem" will no doubt search the volume.

There will be meat in the book for all of them. The economists, provided they have followed Schultz's writings of the last few years, will find little that is new and different.

The book is divided into four parts. The first two primarily describe and hastily analyze "problems that have their origin in the interrelationships *between* agriculture and the rest of the economy." The other two appraise recent agricultural policies and suggest changes for the future.

For the years immediately ahead, the author predicts that our agriculture will find itself substantially overextended. "Barring a pronounced inflation . . . within one or at the most two years after the war, farm prices are likely to recede . . . and many of them are likely to break through the price floors set by the Government . . . chronic agricultural surpluses in . . . fats and oils, wheat, cotton, rice, coffee, and sugar . . . are likely to put in their appearance within two to five years after the war." In short, the agricultural situation of pre-war years is likely to be with us again.

In his diagnosis of the agricultural situation for the long pull, Schultz emphasizes two major problems: (1) the long-time one of low earnings of farm people relative to earnings in other sectors of the economy, and (2) the short-time fluctuations in agricultural income.

The first he attributes mainly to a secular tendency for the growth of demand for farm products to increase at a slower rate than the growth of supply. The second he explains principally by wide variations in the demand for agricultural products while the total volume of agricultural output continues on a fairly stable level.

In his policy recommendations, the author not only writes a prescription to treat these two major ills but he also offers some strong medicines on production adjustments and a price policy for agriculture.

Since the long-time problem of relatively low earnings is manifested mainly by underemployment among a large proportion of farmers and hence indicates a need for fewer people in agriculture, Schultz recommends that national policy should aim at: (1) expanding nonagricultural industry; (2) encouraging more leisure among farmers; (3) providing an improved national employment service; (4) encouraging mobility by a greater public investment in education, medical care, nutrition, and housing for rural people; and (5) the discouragement of back-to-the-land movements. The first he regards as by far the most important. At no place does he do much more than set forth these objectives. Ways and means of attaining them are very meagerly discussed.

To cope with the short-time or cyclical instability of farm income, he places first emphasis on stabilizing nonagricultural production at high levels. As a secondary measure, he suggests a system of compensatory payments to farmers, counter-cyclical in nature, and made in ways that will not disturb farm production and marketing. Just how these two conditions are to be met is by no means clear. Crop insurance, the storage of feed grains, and improvements in farm technology are also suggested to stabilize production and farm income. The stabilization of nonagricultural production is primarily a problem in fiscal-monetary policy, he says, and is outside the scope of this book. To neglect this issue is, of course, to leave a big and important gap. Admittedly the problem is complex. But if agricultural economists have nothing to offer toward its solution, they leave untouched one of the really serious forces affecting the welfare of agriculture.

In production-adjustment policy, Schultz's principal points are that attempts should not be made to synchronize agricultural production with the ups and downs of business activity and that in order "to bring about the best use of agricultural resources . . . *we must make prices, namely, the relative prices of both factors and products, the keystone of agricultural policy*." He also suggests soil conservation, better farming practices, improvement in tenure relations, enlargement of inadequate farms, and special aids to "depressed areas," as production adjustment techniques.

Among his most important objectives for a proper price policy for agriculture are: (1) stability in the general level of prices at a full employment level of output; (2) less discrepancy between domestic and foreign prices; and (3) a system of forward prices for farm commodities set at such relative levels one to another as to bring about the most efficient use of resources. He is extremely critical of the present parity standard, and insists that any criteria based on past relationships, instead of future expectations, are unsound in principle.

Space does not permit an adequate evaluation of Schultz's policy suggestions, but many readers will no doubt conclude that he has done an almost phantom-like job of "broken field running." He recommends program after program with little indication of their size, cost, method of implementation, or connecting interrelationships. Now and then he probably starts toward the wrong goal line, as when he recommends a stable price level with full employment. A period of full employment would almost assuredly be accompanied by declining unit costs. A stable price level under such conditions would result in extremely high returns to stockholders, managers, and well-organized industrial workers. Other groups would benefit very indirectly if at all. To maintain full employment under such conditions would be very difficult. Other views, too, merit careful analysis—for instance, his heavy reliance on pricing to efficiently allocate resources. He readily recognizes that pricing will offer little toward a solution of what he correctly calls, "a fundamental disease of long standing, [namely] a bad case of excess resources in agriculture." Moreover, his combination of forward prices and compensatory payments on a commodity basis may not be highly effective in efficiently allocating resources *within* agriculture. Much depends on the way in which the two are tied together. However, the "general drift" of his policy recommendations are in a sound direction. More important than the sins of commission are those of omission. In refraining from discussing both "agricultural welfare policies" and general employment policies he leaves much unplowed ground for the future.

—James G. Maddox

UNEASY MONEY. By *EDWARD H. FAULKNER.* University of Oklahoma Press. Norman, Okla. 114 pages.

CONTEMPLATING the future, the author of this brief volume voices the concern felt by many regarding the future stability of our economy. The possible repercussions from our new position in world affairs, the uncertainties created in adjusting from a wartime to a peacetime economy, the "300-billion-dollar" public debt, high prices, and high wage rates are discussed. A note of alarm is sounded. At times he becomes pessimistic in the extreme, as when he advises everyone possible to grow a garden during the next few years in order to have an "assured food supply" in case of a breakdown in our complex economic life.

But his major thesis—reduction in production costs in order to provide commodities at lower prices—will strike a responsive chord, even among most economists. Less acceptable to many agriculturists will be his proposal that agriculture be the first to start this trend by reducing its own prices in order to get the process started. But the pill is sugar-coated by the argument that net farm incomes can be maintained with appropriate reductions in costs.

Ideas first promulgated in "Plowman's Folly," the author's previous successful though provocative book, form one of the important keys to possibilities for cost reductions in agriculture. Several interesting chapters are devoted to possible new methods for bringing these about, generally revolving about those changes that would result from more widespread use of green-manure crops and incorporation of large quantities of humus in the surface soil. Elimination of crop rotations as generally conceived is one innovation; substituted instead is the growing of a crop year after year on that part of the farm where it is best suited from the standpoint either of soil or of desirable location with regard to the farmstead. Suitable cultural practices would make this possible. It would result in lower costs by growing such bulky crops as hay near the barn and would provide for closer adjustment of crop acreages to demand, through elimination of the "need" for fixed acreages because of a fixed rotation system. Other possibilities are considered, including the possibilities in farm chemurgy.

Little substantive evidence is given for the author's contention that these practices will reduce costs by about one-half. Presumably the major reduction would be brought about through increased yields and accompanying reductions in unit costs. Increased yields—as well as increased prices—have been a major factor during the last few years in increased net farm incomes, although cost rates have gone up substantially during the war. Most students of agriculture expect agricultural production to continue at high levels, even without any revolutionary changes in farming systems and practices.

It is easy to agree with the thesis that reduced production costs will be necessary in the future, but it is much more difficult to know just how these reductions will be brought about—not to mention the many economic and financial problems that will be created as well as solved by a drastic lowering of the general price level. Many of the ideas expressed are stimulating and thought-provoking, although one suspects that the author is better versed in agronomy and soil culture than in economics and finance.

—Carl P. Heisig

◆

THE FARMER'S LAST FRONTIER: AGRICULTURE, 1860–1897. THE ECONOMIC HISTORY OF THE UNITED STATES. Volume V. By *FRED A. SHANNON*. Farrar & Rinehart, Inc. New York and Toronto. 434 pages.

MUCH has been written on the history of agriculture in the United States during the last half of the nineteenth century. Most of this material has dealt with selected problem areas or with topics of special interest to individual authors. Shannon, however, is the first to undertake and accomplish the valuable task of evaluating these scattered materials in relation to each other and presenting a comprehensive and balanced account of the changes in agriculture in our country between 1860 and 1897.

During the period covered by this book the United States attained its maturity and emerged as a world power. After the Civil War, agriculture spread rapidly across the western prairies and into the Great Plains, where it came in conflict with the cattle industry, which had advanced northwards from Texas. Slavery had been abolished in the South, but that region had been left without sufficient capital, credit, cheap transportation, and marketing facilities. In the East, farmers were becoming aware of western competition, and in the Far West, agricultural potentialities were mostly undeveloped.

According to Shannon, agricultural adjustments were most difficult and complex in the South and in the interior of the continent. The problems of the South are still but partially solved. Although there was a temporary shift toward crop diversification and agricultural self-sufficiency during the Civil War, the war's conclusion brought intensification of the one-crop system.

In the western prairies and the Great Plains, the accomplishment was more spectacular. Never before had so large an area been settled and brought under cultivation in so short a time. But in achieving this end, farmers were often the losers. The Homestead legislation, passed in the 1860's, had been conceived earlier when land was still available east of the Mississippi. Farther west, where the laws were applied, both soils and climate were radically different from any that the farmers had hitherto experienced, a homestead of a quarter-section was too small to support a family under semiarid conditions, and most of the land laws passed provided loopholes for land monopolization. Railroads to the Pacific received land grants ranging from 10 to 80 square miles for every mile of track laid, the Desert Land Act seemed almost designed to give special privileges to great cattle companies, and the Timber and Stone Act encouraged the monopolization of all valuable timberland not yet patented in the United States. Individual farmers were unable to cope with organized monopolies, expensive transportation, inadequate credit, and poor marketing facilities. Only when conditions became unbearably bad did the farmers unite, and as soon as the laws they advocated were passed or their economic position improved with periods of national prosperity, farmer organizations declined or died.

Although farming had spread across the continent between 1860 and 1897, agriculture had progressed because of rich land resources and in spite of mistakes, shortsightedness, greed, and ruthless disregard for the future. Recognition of these errors, however, led to the establishment of the Department of Agriculture and to the introduction of agricultural education and experiment stations which provide a basis for sounder progress in the future.

In this book Shannon has made a valuable contribution to the industrial history of the United States. The publication of the volume at this time is particularly opportune as a warning, since the United States is not only entering a new phase of its own agricultural history but is also sharing the responsibility for the rehabilitation of agriculture in other parts of the world. It is probable that specialists will take exception to some aspects of the book—chiefly omissions. Climatologists will feel that the role of climate has been underestimated, easterns may feel that their part of the country has not received due consideration, agronomists may find the chapter on mechanization inadequate, soil conservationists will discover little concerning the beginnings of soil erosion although these were evident in various parts of the country before 1900, and those who are areally minded will regret the total absence of maps.

Criticisms on the basis of omission, however, are scarcely justifiable since no single volume could possibly satisfy the needs of all specialists. In the preface the author gives his purpose: "I have tried to view the scene as the farmer saw it and picture the farmer himself as he was affected and was influenced by the world in which he worked and lived." This purpose has been admirably accomplished.

—*Lois Olson*

Pioneer Settlement in the Asiatic Tropics—Studies in Land Utilization and Agricultural Colonization in Southeastern Asia. By *KARL J. PELZER.* American Geographic Society. New York. 288 pages.

NOW THE WAR is over man's energy and ingenuity can be directed toward attaining the Four Freedoms. For the vast majority of the people Freedom From Want assumes primary importance in many parts of the world. In the Asiatic Tropics, want resulting from over-population is rampant, although much good land remains unsettled.

Pressure of population upon the land was recognized as a serious problem before the war, and a few forthright endeavors were made to solve it. The enterprising Dutch spent large sums to relieve congestion in Java, and the Filipinos, with the assistance of the United States, made some progress in population redistribution in the Philippines.

Pelzer's book presents an analysis of the many perplexing problems encountered in these undertakings and gives a summary of guiding principles for successful settlement. This study is particularly timely, for land settlement is one of the most puzzling problems that will confront Acting Governor General Van Mook and High Commissioner McNutt in rehabilitating the Netherlands Indies and the Philippines. The book can be invaluable in improving settlement techniques throughout the world.

Land use and occupancy in these two archipelagos are outlined as well as the transition from primitive to advanced agriculture and the land use problems of shifting and sedentary cultivators. This furnishes the background for the second part of the book, which chiefly deals with recent settlement on Mindanao and the Outer Islands. Excellent pictures supplement the text. Supplementary information is found in an appendix.

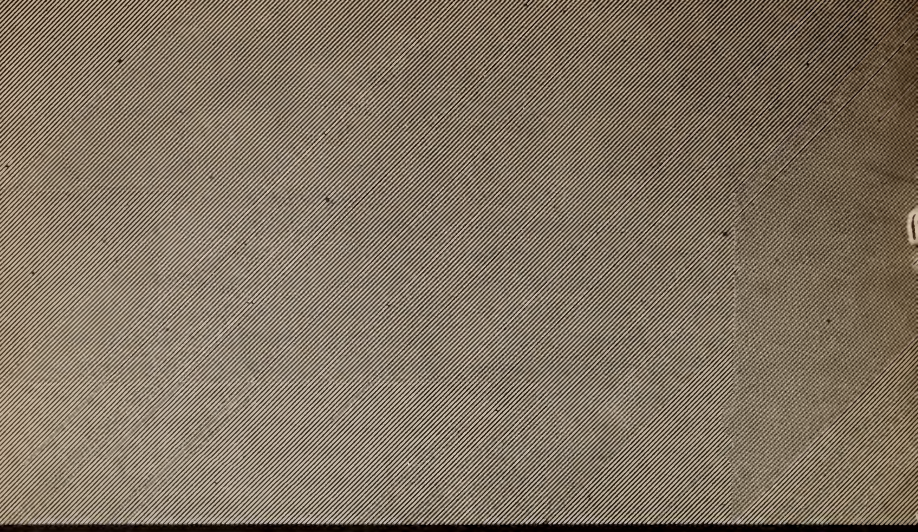
Among the suggested requisites for good settlement are: (1) development and maintenance of enthusiastic public support, (2) careful study of soils, climate, irrigation, drainage, suitable crops, proper farm practices, necessary soil-conservation methods, and the land rights and requirements of indigenous peoples, (3) adequate health facilities and protection, (4) scientific settler selection ("ten commandments" for successful selection are outlined), (5) adequate financial backing, (6) economic-sized farm units, (7) settler cooperatives, (8) compact rather than scattered settlement, (9) free exchange of ideas and information, and (10) realization that settlement will not cure all economic and social ills.

New factors must be utilized fully, as DDT to control insect pests and the heavy war-related equipment available in the area for clearing, leveling, irrigation, and drainage. Above all there is the United Nations' Food and Agriculture Organization with its great potentialities.

Pelzer's concluding remarks are: "A pooling of scientific manpower, as well as of experience, will therefore be beneficial, if not essential, to the whole of Southeastern Asia. Such a pooling could probably be best effected by an international agency, which might take the form of a broadly representative regional council."

—*Marshall Harris*

U. S. GOVERNMENT PRINTING OFFICE: 1946



UNO Assembly

Those who thought that we would perform miracles are disappointed, but those who understand the economic and political problems left by war will be satisfied.

—Paul-Henri Spaak

Ec7La
cop. 2

Land policy REVIEW

Contents FOR FALL 1946

Vol. IX, *No. 3*

Page
In-Holdings in National Parks . . *Newton B. Drury* 3
Soil Science in England . . . . . *Sir E. John Russell* 9
Rural Rehabilitation Experience . . *Olaf F. Larson* 13
Possibilities in Rural Handicrafts . . *M. L. Wilson* 19
Ingenuity in the Rice Fields . . . *Jenkin W. Jones* 23
Wood-Farm Crop with New Outlets . . *J. A. Hall* 27
Books . . . *Bushrod W. Allin, Mary U. Rothrock, Mary G. Lacy, A. B. Genung, Clayton E. Whipple, Everett E. Edwards, Floyd J. Hosking, G. H. Aull, Robert L. Pendleton, John F. Timmons*

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS

Contributors

Newton B. Drury is the Director of the National Park Service.

Sir E. John Russell, Late Director of Rothamsted Experimental Station, Harpenden, England, sent this article when he heard we wanted one on this subject for nontechnical readers.

Olaf F. Larson joined the Cornell faculty this Fall as Associate Professor of Rural Sociology. When in BAE he was in charge of rehabilitation and low-income studies and at times was an area leader with field headquarters.

M. L. Wilson's interests are wide as the world; he is Director of the Extension Service in the United States.

Jenkin W. Jones is Principal Agronomist in charge of Rice Investigations, BPISAE.

J. A. Hall, previously with the Forest Products Laboratory, Madison, Wisconsin, now directs the Pacific Northwest Forest and Range Experiment Station, Forest Service, Portland, Oregon.

Bushrod W. Allin, Chairman, Outlook and Situation Board, John F. Timmons, agricultural economist, Everett E. Edwards, agricultural historian, and A. B. Genung, Information Specialist, are in BAE; Mary U. Rothrock, specialist in library service, has been on the Training and Educational Staff of TVA since its beginning; G. H. Aull heads the Department of Agricultural Economics and Rural Sociology, Clemson College, S. C. and Clayton E. Whipple heads the Europe, Soviet Union, and Middle East Division, OFAR; Floyd J. Hosking, analyst, is in the Washington office of Corn Industries Research Foundation; Mary G. Lacy sends her review from Wytheville, Va.; Robert L. Pendleton, OFAR, an expert on tropical soils, has now left for Siam.

LAND · POLICY · REVIEW

Land Policy Review is published quarterly by the Bureau of Agricultural Economics, U. S. Department of Agriculture, with approval of the Bureau of the Budget. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., 10 cents a single copy, 30 cents a year

Private In-Holdings in National Park System

By NEWTON B. DRURY. *The Director of the National Park Service gives to our readers a clear statement of an old problem in regard to the parks, together with his ideas as to the solution.*

THERE ARE approximately 21,000,000 acres of land within the established boundaries of our national parks, monuments and historical areas, or less than 1 percent of the total area of the United States, Alaska, and Hawaii. Of this acreage approximately 600,000 acres are "valid existing claims" in the form of State or private in-holdings. Since the owner of lands in a park or monument has exactly the same rights as a landowner anywhere, there is nothing to prevent him from despoiling his land, from a park standpoint, by establishing undesirable developments or removing his timber or using his land in such fashion as to deplete it or cause damaging erosion, the effects of which may extend beyond his own boundaries.

Often these lands are of strategic importance to the development of the area. Road and trail construction may be complicated by them; access must be provided to them; and the danger of fires spreading from them is ever present. Though these in-holdings represent only 2¾ percent of the gross area of the System, the handicap they impose is out of all proportion to their extent, and the problem they create is one of the most serious facing the National Park Service.

The act of August 25, 1916, which created the National Park Service, states in part:

"The Service thus established shall *promote* and *regulate* the *use* of the Federal areas known as national parks, monuments, and reservations hereinafter specified by such *means* and *measures* as conform to the *fundamental purpose* of the said parks, monuments and reservations, which *purpose* is to *conserve* the scenery and the *natural* and *historic objects* and the *wildlife* therein and to *provide for the enjoyment of fu-*

ture generations." [Italics supplied.]

The 169 areas which comprise the National Park System today, have been established individually by Congressional action, by Presidential proclamation under authority of the Antiquities Act of June 8, 1906, by order of the Secretary of the Interior under the Historic Sites Act of August 21, 1935, or by transfer from other Federal agencies. All action to establish these areas has been subject to "valid existing claims."

Private holdings within the National Park System divide into three main categories: (1) State-owned lands—150,000 acres; (2) railroad-owned lands—150,000 acres; and (3) other privately owned lands—300,000 acres. The problems created by each type of ownership and, I believe, their solution, are generally distinct and separate. I shall endeavor to picture these problems and to give my ideas for their solution in the light of present-day economic and social concepts.

State-Owned Lands
150,000 Acres

There are State-owned lands in 26 of the 169 areas in the System. The most prominent examples are in Glacier and Carlsbad Caverns National Parks and Dinosaur, Great Sand Dunes, Joshua Tree, Saguaro, and White Sands National Monuments.

The acts of Congress by which most of our public-land States were admitted to the Union reserved for common-school purposes from two to four sections in each township where surveyed, or provided for indemnity selections in surveyed land for those sections that were unsurveyed townships. Provisions were made whereby such sections, if they happened to fall in subsequent Federal reservations, such as national parks and monuments, could be exchanged for public domain outside of the reservations.

Accordingly, many thousands of acres of the States' holdings within the National Park System have been exchanged and other exchanges are now pending. Because of previous exchanges made by the States, and other public-land utilization, the public land available for exchange has decreased until it has become more difficult to consummate exchanges. There are available for exchange, however, on a value basis, many thousands of acres under the provisions of section 8 of the Taylor Grazing Act of 1934, as amended in 1936.

Perhaps the State ownership in the System that best illustrates the problem confronting the National Park Service is the 10,000-acre stand of virgin Ponderosa pine just west of the continental divide in Glacier National Park. Montana was admitted to the Union in 1889, and by 1910, when Glacier National Park was created, had exchanged land in other reservations or accepted indemnity selections for unsurveyed sections elsewhere in the State, until it had acquired these 10,000 acres of contiguous fine timber—almost the last of the species in this vicinity. Over a period of 30 years a number of attempts have been made to exchange public land outside of the park for the State's holdings inside. All efforts so far have been unsuccessful.

Recent inflated values of lumber have increased the threat that the timber on the State's holdings will be cut. Because of this increased threat it has been suggested by friends of conservation in general, and of the National Park Service in particular, that Congressional action be taken toward appropriating Federal funds to purchase the State's holdings. I would not favor this if the situation can be handled in any other way. While our national parks and monuments are of inestimable importance to the people and the Nation, they are also great economic and social assets to the various States. I feel, therefore, that Montana should not despoil Glacier National Park, one of its greatest assets, by cutting the timber from its State holdings within the park boundaries, but that it should cooperate in maintaining the park unimpaired for the people, as intended by the Congress.

Many of the States have recognized the great value of national parks and monuments within their boundaries and have made an all-out effort to acquire the requisite lands for donation to the United States. Many have spent large sums that they might have national parks within their borders. Virginia expended nearly $2,000,000 of State and donated funds to acquire approximately 175,000 acres of land for Shenandoah National Park. North Carolina and Tennessee expended approximately $8,000,000 of State and donated funds in acquiring approximately 380,000 acres for Great Smoky Mountains National Park. Kentucky expended approximately $1,000,000 of State and donated funds to acquire approximately 32,000 acres for Mammoth Cave National Park. Only recently Texas expended over $1,700,000 in acquiring nearly 700,000 acres for Big Bend National Park. Florida has acquired approximately 1,200,000 acres for the proposed Everglades National Park, and Kentucky, Tennessee, and Virginia will probably spend over $750,000 for about 15,000 acres for the proposed Cumberland Gap National Historical Park. These are just a few examples.

I believe that the solution to this problem rests chiefly with the people of the States in which our parks and monuments are located. One or more of three possible steps might be taken by the people through their elective or appointed officials: (1) review the possibility of exchange with a greater emphasis on preserving the park areas as an existing asset for posterity; (2) obtain legislative action toward donating their holdings for addition to the park or monument areas; or (3) obtain legislative action whereby the use of the State-owned land in park or monument areas would be restricted to conform to the purpose of the 1916 act, even though actual title remained in the State. The people of these States, if they took any of these steps, would make a significant contribution to the Nation as well as to themselves.

Railroad-Owned Land 150,000 Acres

Under various land grant acts, several of our western railroads acquired over 132,000,000 acres of the public domain as an incentive to railroad construction. More than 500,000 acres were within the later established national parks and monuments, chiefly Grand Canyon and Yellowstone National Parks and Joshua Tree, Grand Canyon, and

Harmony

For thou shalt be in league with the stones of the field; and the beasts of the field shall be at peace with thee.

—The Book of Job

Wupatki National Monuments. About 350,000 acres of this latter figure were released pursuant to the Transportation Act of 1940, leaving 150,000 acres within the System today, 135,000 acres of which lie within the boundaries of Joshua Tree National Monument in California.

These lands lie in checkerboard fashion, being alternate sections throughout the western or surveyed end of the Joshua Tree area. There has been some recent activity by real estate promoters to acquire some of the railroad-owned land for desert homesites. I am happy to say, however, that the Southern Pacific Railroad has been cooperative, and that the National Park Service, by initiating action whereby the railroad-owned land may be exchanged for public land of equal value outside the monument boundaries, has forestalled, so far, the sale of most of the railroad-owned land to the real estate promoters. A measure now before Congress would diminish this problem by revising the boundaries of the monument, thus eliminating considerable acreage of mineralized land, both private and Government-owned, which is of minor scenic or scientific importance.

The national parks and monuments drew more than 21,000,000 visitors in 1941, the last year of prewar travel. This figure was then the largest in the history of the National Park Service. A considerable increase is indicated for 1946. Our railroads, particularly the western lines, have profited and will continue to profit from such travel. Joshua Tree National Monument, if allowed to continue "to provide for the enjoyment of future generations," will contribute increasingly to satisfaction of the desire of Americans to visit the open spaces.

It seems to me that the answer to the problem of railroad inholdings would be for the railroads to take full advantage of exchange possibilities under existing law. They stand to gain twofold—by obtaining land of equal value and by adding to long-time profit possibilities by the preservation of parks as an attraction to travel.

Privately Owned Lands 300,000 Acres

The privately owned lands in the National Park System, involving some 3,000 individual ownerships, vary from lots to subdivisions, from homesites to ranches, from cabinsites to resorts, from soft-drink stands to cafes and night clubs, from automobile "graveyards" to sawmills and gravel pits. All are alien to the concepts of our national parks, monuments, and historical areas; many are eyesores and all present grave problems of administration and protection.

Perhaps the most troublesome type of private holding is the subdivision. Few people realize that there are real estate subdivisions in Glacier, Kings Canyon, Lassen Volcanic, Olympic, Rocky Mountain, and Yosemite National Parks. Buildings have been constructed on them with little regard for design, sanitation, or fire protection. Many lots have been sold and resold several times; others have been abandoned and become tax delinquent. They present a sorry picture to visitors who may easily get the impression that such areas are sponsored by the National Park Service.

There are many types of commercial establishments on privately owned land in the System. Typical of these are taverns, dance halls, and souvenir stands. Many are poorly supervised. Many of the buildings are dilapidated and constitute fire hazards. None can, by any stretch of the imagination, be considered proper from the standpoint of the purposes of the 1916 act.

There are three methods of approach in acquiring the privately owned lands in the national parks, monuments and historical areas—donation, exchange, and purchase.

Donation

Many thousands of acres of land have been donated by public-spirited persons for addition to the National Park System. These include both individual tracts and thousands of acres that have been bought by private citizens for donation to the United States. There are undoubtedly some private owners who have been wavering over the idea of giving their holdings. Such gifts would be most welcome, although we do not presume to indicate what individuals should do with their own property. The most we can do is to dissuade them, within reasonable limits, from using it adversely, pending its acquisition.

Exchange

Exchange has not been used extensively in the past. Certain exchanges have been consummated, however, whereby the United States obtains title to small privately owned holdings for timber or mineral privileges on Federal land within the area. From the nature of such exchanges it can be readily understood why they have been small and will be kept so in the future.

Recently the Service has sponsored legislation to provide for exchanges of Federal lands *within* our parks or monuments for private in-holdings on a value basis. If enacted, this measure would probably not decrease the acreage of the in-holdings appreciably, but would allow the Service to acquire certain strategic parcels that are now holding up needed developments or to remove developments that are unsightly or unsanitary, or are fire hazards. The passage of this legislation would be a notable step forward in the administration and protection of the National Park System.

Purchase

In spite of a certain amount of wishful thinking to the contrary, much of the privately owned lands may have to be bought with Federal funds if they are to be acquired for public use. So far, purchases have mostly been made piecemeal. Just before the depression some lands were bought on a 50–50 basis, 50 percent being Federal and 50 percent being donated funds. During the depression some lands were bought with emergency funds and were later made a part of the System. A $350,000 item in the 1947 appropriation bill for the Interior Department, for land acquisition to be expended anywhere in the System, was not passed by Congress. It is believed that the principle involved in the item, if once established, would be of greater advantage to the Government than the present method of making appropriations for the purchase of specified properties.

To summarize: The most serious in-holding problems in the National Park System today are those created by the State-owned lands in Glacier National Park, the railroad lands in Joshua Tree National Monument, and the real estate subdivisions in several of our western national parks. The solution of these and all in-holding problems rests chiefly in the realization, by all of our people, that the national parks, monuments, and historical areas are vital economic and social assets to the Nation, and that the Government holdings within their boundaries should be unified and complete. There are indications that we are awakening to this realization and will translate it into action.

◆

Over those parts of the earth not covered by water lies a thin crust of soil, perhaps equal by comparison to the thickness of a sheet of tissue paper wrapped around a globe six feet through. Much of this soil is inaccessible for cultivation, or it is unusable for other reasons. From the rest, the world's growing population, now more than two thousand million, must draw all their sustenance except what they get from the sea; and even the fishes, like all other living things, are fed in the final analysis out of the fertility of the land. Whether this thin layer of soil is to be a wasting asset or one maintained in perpetuity and made more fruitful for mankind will depend on how it is used and managed. Nothing more deeply concerns the well-being of men and nations. FAO is dedicated to furthering good use and good management, in all ways and by all peoples, of this most basic of man's resources.

—*From Report of* UNITED NATIONS INTERIM COMMISSION ON FOOD AND AGRICULTURE

Solving Secrets OF THE *Soil*

By Sir E. JOHN RUSSELL. *Rothamsted's centenary aroused a wish to learn more for our readers about its work in soil science. We asked to hear and had this quick response straight from the former Director of the Experimental Station himself.*

LAWES AND GILBERT started the Rothamsted Experiments in Britain over a hundred years ago, but it was some time before they concerned themselves with the soil. Their interest was in the food of plants, recently discovered by chemists and botanists. They showed that when these foods were applied in the form of fertilizers they usually increased the yields. Labor was cheap and abundant and prices were relatively high, there was no need to economize on fertilizers. A generous dose was given and the extra crop paid for it. If there were a certain overdose, no great harm was done.

The first soil work at Rothamsted—Britain's famed Soil Experimental Station in Hertfordshire—was in the 1880's. In British conditions the most uniformly effective fertilizers are those supplying nitrogen; the commonest were and still are sulphate of ammonia and nitrate of soda. There is no great difference between them though nitrate of soda is rather quicker in action and rather more effective. The actual plant food was found to be in the nitrate, and in the soil the ammonia rapidly changed to nitrate. This conversion is not easy in the laboratory at ordinary temperatures, and how it took place in the soil was for long a mystery. Finally two French chemists showed that it could be brought about in the laboratory by bacteria. Warington at Rothamsted showed that, in the soil, bacteria were also responsible. For the first time it was realized that soils contained a multitude of minute living organisms occupied in making plant food.

Meanwhile British agriculture had fallen on evil days, and farmers could no longer afford their easy-going methods. Fertilizers had to be used with the strictest economy and Dyer at Rothamsted set out to find a way of discovering by chemical analysis whether a soil really needed potash or phosphate. He devised a method that worked and is still used. Its basis was purely empirical. When A. D. Hall succeeded Lawes and Gilbert at Rothamsted in 1902, he started investigations on soil analysis on a sound scientific basis. At that time it was recognized that the potash and phosphate existed in the soil in a variety of minerals, some of which were very resistant while others were easily decomposed; it was only the latter that were of much use to the plant. Hall soon discovered that there was no hard-and-fast line between these two groups; one acid would extract a certain quantity of phosphate and potash, another would extract more. If the conditions varied the amount extracted also varied.

Soil Surveys

But the problem was more complex, for plants varied in their ability to take up potash and phosphate. In short, there was no such thing as an absolute amount of available potash or phosphate in the soil; what was available to one plant was not necessarily available to another. A solution of the difficulty was found. It was rather round-about, but typical of the methods scientists often have to use in their work. Hall knew about the excellent soil surveys being made in the United States. In conjunction with the present writer he made a survey of the soils of South-East England using both chemical and physical methods. On similar soils there was a relation between the chemical analysis and the response to fertilizers: if a certain acid extracted 0.015 percent of phosphoric oxide from a soil known to respond to phosphatic fertilizer, then it is safe to assume that another soil of the same type containing the same or a less amount would also respond to the phosphatic fertilizer.

So it was recognized that the areas of similar soils should be mapped, that field experiments should be made to discover the response of crops to fertilizers, and that the crop results should be related to the analytical data. On this basis it has been possible to advise farmers with a good deal of certainty about their manuring, and the method is widely used in the United Kingdom.

Analysis Improved

Soil analysis has recently been much developed at Rothamsted in a remarkable investigation by E. M. Crowther on the manuring of sugar beet. Manurial experiments are made throughout the sugar-beet regions and also extensive soil analysis by new and improved methods. The results hang together remarkably well and in consequence the advice on the manuring of sugar beet can now be given with much greater confidence than before.

Meanwhile the older work on soil bacteria had been resumed. It was found that soil was continuously taking up oxygen and giving out carbonic acid gas and that this action was mostly due to living organisms. More fertile soils usually absorbed oxygen more rapidly than those less fertile, indicating that their bacterial activity was greater. When the bacteria were killed by sterilization, oxygen absorption became much less, but when the soil was partially sterilized, thus killing active organisms but not spores, and conditions then made favorable for the germination of spores, the oxygen absorption greatly increased as did bacterial numbers. It was found that the natural untreated soil contained large numbers of protozoa which feed on the bacteria and keep their numbers down; these are killed by partial sterilization.

Tumult in Soil

As the methods of investigation improved the numbers of living organisms in the soil were found to be vastly greater than had been supposed. Hutchinson's first counts at Rothamsted showed about 5 to 20 million bacteria per gram in the farm soil (there are about 28 grams to an ounce). The latest methods of H. G. Thornton show about 1,000 times this number. So also the numbers of protozoa revealed by modern methods are considerably greater than by the earlier methods.

What is perhaps more remarkable is that the numbers instead of remaining fairly steady are continually changing even in the course of an hour. The turmoil in the quiet-looking soil is something unimaginable to our sober minds. In addition there are moulds, actinomycetes, and other vegetable organisms besides an extensive animal population ranging from rodents downward: earthworms, insects, nematodes, etc. This amazing population is supremely important in the soils because they are the makers of humus and of plant food.

Mosaic of Knowledge

Humus, formed from decaying plant material, contains all the elements of plant food, but its more important properties are that it helps to hold moisture and plant food and to build up the soil particles into crumbs. Its chemical composition and constitution are complex and difficult to determine, as many scientists in many countries have found out. A vast mosaic of knowledge has grown up; in its accumulation Rothamsted has played its part.

But humus is not the only sticky substance in the soil; there is another of equal importance, the clay. This is mineral; chemically it is entirely distinct from humus but it has two properties in common with humus which give it its agricultural importance—its ability to hold water and plant food and its power to build up the soil particles into crumbs. It is impossible to exaggerate the importance of crumb formation in soils. Soil crumbs represent life to the plant and the soil; when they fall down to dust it means death, for the dust is easily blown or washed away and then soil erosion sets in.

Demanding

No other profession requires such a variety of learning, such an insight into Nature, such skill of a technical kind in order to be successful, as the profession of farming.

—Harvey W. Wiley

Water Relations

Soil erosion is not a problem over most of England but the power of the crumbs to hold water is, for although we have no arid regions our crops often suffer from partial drought. The water relations of our soils are therefore important from the practical point of view, but equally so from the scientific, for they are essential to an understanding of the structure of the soil. B. A. Keen took the subject up when he came to Rothamsted. It was then usually supposed that capillarity was chiefly concerned in regulating the relations of soil to water, but he showed that this was not so, and he, and later colleagues, found more accurate, though more complex, explanations.

Crumb Studies

Crumb formation is of such vital importance in the soil that many scientists are trying to find out all they can about it. The weather has something to do with it, especially the winter freezing and thawing. Bacteria have an active part. Plant roots are effective, particularly those of grass and clover, as has been observed in the United States. At Rothamsted Laboratory studies of the processes involved have been made by E. W. Russell. The work is complicated by the fact that soil particles can also agglomerate in another way and form clods which behave quite differently from crumbs. They are not at all what the farmer wants though he may easily get them if he cultivates wrongly.

Deep Ploughing?

While the scientific work goes on slowly and quietly the scientist has a responsibility to the farmer. The great purpose of cultivation is to make a good seed bed and to get what the farmer calls a good tilth. This involves good crumb formation; a bad tilth is more of the nature of clod formation. B. A. Keen started the work of finding the effect of the various operations. Cultivation is in Britain an ancient art and its different operations have developed empirically; meanwhile the implements have changed out of all recognition. Are the time-honored methods all necessary today in our new conditions and with our modern implements?

Finding Out

Frequent surface cultivation used to be regarded as desirable, but Keen could find no good effects apart from the killing of weeds. At present, E. W. Russell is making large-scale experiments in deep ploughing. In the old days it was an article of faith that deep ploughing was essential, especially on heavy soils. With the heavy implements then in use, Britain's heavy loam and clay soils were often very productive, but the ploughs needed some six to eight horses to draw them. There were in general only two crops on arable clay soils, wheat and beans, so the ploughing was usually done to the same depth each year. In consequence, a hard layer called a plough sole was formed below the surface at the usual depth of ploughing. This often interfered with drainage and had to be broken up to get the best results—and so grew up faith in deep ploughing.

But that has all changed now. The heavy clays are more and more put into grass, and modern ploughs do not make such drastic plough soles as the old ones, though modern tractor wheels do a great deal of serious compacting. Is deep ploughing still beneficial? The extensive field experiments now being made will furnish the answer.

Soil science has already done much to help agriculture and it will do much more. The combination of field work and laboratory investigations proceed slowly, but it is the surest way to success.

LESSONS FROM *Rural Rehabilitation Experience*

By OLAF F. LARSON. *Now that we have had a full decade of experience in rehabilitation among our rural people, it is time to take stock of goals visualized, methods used, and lessons learned. Moreover, these experiences may have new and extended value in connection with work now to be done in war-depleted countries the world over.*

WHAT LESSONS may be learned by looking back at the Nation's experiences during the past decade with rural rehabilitation programs? What issues are involved in deciding the role of a rehabilitation program as an instrument of postwar national agricultural policy? Answers to these questions were among the purposes of a comprehensive study recently completed of the standard rehabilitation loan program administered by the Farm Security Administration and its predecessors.

Awareness of these lessons and these issues should enable the Nation to do a better job of improving the welfare of farm people in the lower economic brackets, come depression or prosperity. Then, too, measures for the rural reconstruction of war-ravaged countries may be more fruitful if experience in the United States is heeded. The study was restricted to the standard-loan program because, as measured by people or money or geography, this has been the major rehabilitation activity. Thus, the farm-ownership (tenant purchase) and the nonstandard loan programs and the much-debated resettlement-type projects are not included in the generalizations given here.

The chief characteristics of the standard-loan program are well recognized. They include (1) *credit* for normal farm and home operating expenses to farm families who are unable to obtain satisfactory financing from any other private or federal source, (2) *supervision* which includes the making of sound farm and home plans, "on-the-farm" teaching of improved farm and home practices, and (3) rehabilitation *in place*—that is, without resettlement. In addition to the combination of credit and supervision which are key parts of every standard loan, other techniques have been adapted or developed to aid the borrowers. These include improvement of tenure, group services, group-health plans, adjustment of debts, environmental sanitation, special types of loans such as for water facilities and 4–H club activity, and specialized programs carried on in limited areas to develop new methods or to meet localized needs. Grants were used extensively during the depression years but are now greatly restricted. Prior to prohibition by Congress, written into the

1944 Agriculture Appropriation Act and subsequent Acts, cooperative associations were assisted and established to aid the rehabilitation of borrowers. Neighborhood action or study groups at one time were given encouragement as an aid to borrowers.

Nearly 770,000 families, one out of every eight farm operators reported by the census, have had a standard loan from the Resettlement Administration or FSA between July 1, 1935, and the end of 1945. (This excludes farm ownership borrowers and project occupants who have also had standard loans.) These families are dispersed throughout all but a dozen counties of the United States. Several counties, mostly in the cotton-plantation areas of the South, have had more than 1,000 borrowers. Counties having the largest proportions of their farmers with such loans tend to be concentrated in the Mountain and Great Plains States, but nearly three-fifths of the total number are in the States that make up the "four Southern FSA regions." Before July 1935, when administration was under FERA and the State rehabilitation corporations, there was no standard-loan category, but probably the majority of the 397,000 families who were made loans would later have been classified as "nonstandard loan" or "grant only" cases.

Between July 1935 and June 1944 more than 800 million dollars was put out in the form of standard loans to individuals. Direct loans to associations, some or all of whose members were standard borrowers, totaled 22 million dollars during this period. Much of the additional 49 million dollars loaned under FERA would later have been called grants or nonstandard loans.

Some other measures of the scope of the program can be mentioned. More than 27,000 group services were established to provide several times this number of families with needed services or facilities such as sires and machinery. About 4,500 associations of various types were established or given financial or supervisory assistance.

Characteristics Change

Borrowers accepted under FERA had the least in the way of physical and financial resources, had the lowest socio-economic status, and were the most disadvantaged of those accepted at any time. An upward trend in family selection, under way when FSA was started, has generally continued. This means that the "floor" rather than the "ceiling" of acceptance has been raised in prac-

Adversity and Success

Man's mettle is tested both in adversity and in success. Twice is this true of the soul of a nation.

—Mme. Chiang Kai-shek

tice. Wartime objectives accentuated this tendency.

Objectives Broaden

When the program was conceived to perform an emergency function during the crisis of rural relief, the goals for individual families were to relieve their suffering and to restore them to permanent self-support. As the program continued, as understanding grew of the problem of rural poverty, and as deep-rooted causes of poverty were attacked, the objectives shifted and broadened. Stated in somewhat philosophical terms, for the individual family the goals also were to obtain a physically healthful level of living, to obtain a socially desirable level of living, to acquire the skills and abilities needed to manage one's own farm and home successfully and independently, to achieve security, to obtain enough land for an economic unit of the family-farm type, to become a full participant in a democratic way of life, and later, to have maximum employment of the family labor in the production related to the war.

The program has also had broad objectives with respect to agriculture, rural society, and general welfare of the Nation. To save the taxpayers' money was one of the first stated, when the program began in a relief setting—loans plus supervision were viewed as more economical of public funds than either direct relief or work relief. To preserve, reinforce, and perpetuate the family-type farm and to foster farming as a way of life rather than as purely a commercial enterprise have been prominent national goals, along with the encouragement of land conservation.

Wartime Influences

Keeping the maximum number of people on the land was advocated during the early days of the program but this goal was modified and almost reversed by the later aim of achieving full utilization of manpower in the low-income farm population in the production necessary to the war. Discouraging undirected migration of farm population was particularly tied to the problems of man-land adjustment during the drought years. Bringing about a better adjustment of population and land resources was the major attack of resettlement but it is also a goal that has had the support of the standard program. Implied earlier in the whole social-welfare approach, the over-all goal of making available to all of our citizens the opportunities of democracy so they might have a stake in it became more clear-cut under wartime pressures.

These goals for individual families and the larger society have not been concisely stated in any official pronouncement. They are expressed more concretely and are better understood by most people in terms of the working tools used to achieve them—"live at home methods", diversified farming, debt adjustment, tenure improvement, record books, farm and home plans, "precious" cookers.

Basic Assumptions

The objectives rest upon fundamental assumptions which are a complete rejection of the relief philosophy handed down from Elizabethan "poor laws." One other basic philosophical idea came to be propounded: the resources for lasting rehabilitation rest within the people themselves; therefore, the program must direct its efforts toward tapping and mobilizing these resources. This premise is in accord with the democratic spirit. It stands at the exact opposite of paternalistic and continuous supervision.

Measurements

Successes and failures of the program to date cannot be measured solely in financial terms. Repayment by the end of 1945 of 68.5 percent of the principal involved in "high risk" loans to individuals and groups (excluding "corporation trust" funds) plus interest equivalent to 9.6 percent of the cumulative amount of such loans is not, of course, to be passed over as insignificant. By the end of 1945, 45 percent of the standard borrowers had paid up in full, 7 percent had been dropped as having little hope of rehabilitation or of repaying any more on the loan, and 22 percent were rated as being capable of making further repayments but could not be considered as rehabilitated in agriculture.

Although rehabilitation goals cannot be achieved without financial solvency, it is equally true that every dollar loaned might be collected and yet not a family be rehabilitated. Success in rehabilitation is better shown by families who have better living, improved health, more capital resources with which to earn an income so debts can be retired, more secure tenure, debt-payment schedules scaled to debt-paying capacity, improved farm and home management, better work habits, higher morale, an increased sense of "belonging" and "being somebody."

Failure in rehabilitation is better illustrated by families whose debts have increased faster than their ability to repay, whose frustrations have been multiplied by program changes and by requirements and objectives they have not fully understood, whose basic problems have not been met because they were not recognized or, being recognized, were not corrected by the supervisors and families, or whose ways of doing after leaving the program revert to the old, and by the establishment, in some instances, of group activities without regard to the natural social processes of organization.

Beyond

Unfortunately, neither the successes nor failures in many important aspects of rural rehabilitation have been adequately measured.

Without doubt, the very existence of the standard-loan program has meant much to the families who have participated. To some the end result was achievement of the goals held out for them, to others the experience was one more flop. Effects of the program also "spilled over" to influence neighbors, local institutions, and organizations. Again, these spilling-over effects have not been measured. But they can be seen in many forms. Pressure cookers and live-at-home practices have changed buying habits. Old patterns of borrowing, buying, and selling have been broken and replaced by new ones. Sanitary facilities and housing improvements of borrowers have been imitated by others. Group action has taught families how to recognize, analyze, and solve some of their own problems. Health measures to help these families have led to action on health problems of other rural people. Loans and grants which put a floor under the level of living of farm families during the depression years also increased their purchasing power, bailed out landlords and other creditors, and protected the strength of the Nation's manpower resources.

The Lessons

A good many lessons are taught by this experience in rehabilitating low-income farm families. First, it was soon learned that rural poverty was not simply a new depression-born or drought-caused phenomenon but had been growing over a long period and was deeply rooted in a multiplicity of causes. In a sense "rehabilitation" is not an apt word because many families in their generation never were previously at a higher level. A corollary of this first lesson is that many of poverty's causes are outside the direct control of the individual so handicapped. Another is that a complex of problems—not a single problem—is characteristic of families who seek rehabilitation aid and therefore a full kit of tools must be available if the problems are to be met.

Second, the lesson follows that the real meaning of rehabilitation is the attainment of a cluster of interrelated economic and social goals. It is not just paying off the loan, just canning so many quarts of home-produced food per person, just acquiring more working capital, or just getting to participate in community affairs.

Third, one of the most important lessons is the understanding that has been gained of the nature of the rehabilitation process. All families do not start from the same point and all do not have the same problems; therefore, flexibility is required in the rehabilitation tools and techniques and in their use. One family may need nothing more than a small loan for a short time, with a minimum of guidance. The rehabilitation of another may be a two-generation job, costly in time and money. The speed of the process is decided by (a) family characteristics and resources, (b) rehabilitation aids, (c) the culture—especially as expressed by attitudes, social values, class structure, social institutions and social and economic facilities—within which the family lives, (d) impersonal forces—such as war, flood, or depression—outside the control of the family or the program agency.

Fourth, loans plus supervision, with associated techniques, constitute an invention which can be a powerful instrument of rural social change for the welfare of low-income farm people.

Fifth, several principles have been established concerning the use of the various rehabilitation tools and techniques. A few may be enumerated. The loan must be large enough and for such purposes as will establish the borrower's debt-paying ability if repayment is to be expected. The lower the economic level from which a borrower comes, the more flexible must be the repayment schedule. The lower the status and the more complex the problems of a family, the greater the need for the individualized method of supervision. Families should understand the program before making the decision to

710493—46——3

participate. Families who have lived under depressed circumstances and in inferior status for a long time are more likely to need continued supervision than are those whose plight is of recent origin.

Possibilities

Looking ahead, a standard-loan type of rural rehabilitation activity has two possible major roles as a national program. In one role the program would continue to be a positive instrument of social and economic improvement on behalf of the low-income segment in American agriculture. That there is a tremendous need for such a service is indicated by the fact that a substantial number of existing full-time farms are not adequate, as to either size or organization of farm enterprises, to provide reasonably efficient use of the family's labor, or to support a healthful and desirable level of living for the operating family. Advances in technology, the return of veterans to civilian employment, and other factors in the present situation foretell many adjustments in agriculture in the years ahead. Many farmers cannot make these adjustments without assistance.

In the other role, the program could stand by, ready to help farm families who fall into crisis situations because of depression, flood, drought, or other disasters which deplete their resources. It would help them get back on their feet. This is a job which some agency should be ready to do at all times.

In the first role, certain hard facts must be faced—for agriculture and for rural society as a whole. As pointed out by BAE economists, technology has advanced so fast that foreseeable demand for agricultural products can be met without an increase in farms or farm workers. Yet the rates of farm-population replacement by natural increase are so great that 67 percent more young farm men are reaching the age of 25 during the present decade than are needed to maintain the working force of farm men at 1940 levels; not all could stay on the farm even with no further technological advances. These facts, coupled with the large number of existing inadequate farm units, add up to mean that the agricultural program needs to be supported by broad gauge industrial and educational measures if the problems are to be adequately met. Any such positive program has to face tough problems of family selection. It might find work with part-time farmers to be of increasing importance.

If agriculture plays its historical function of shock-absorber for industry, a depression would bring a back-to-the-land movement and a piling up of people on the land through delaying the migration of so-called surplus farm youth. This would create pressures that might cause a repetition of the mistakes and shortcomings of the early rehabilitation program. On the other hand, a full-employment era would provide an opportunity for constructive work of the type outlined for the first role. Such work could benefit a large segment of our rural population and advance the general welfare of our nation as well.

Rural Handicrafts— Postwar Possibilities

By M. L. WILSON. *Those who see these handicrafts in their relation to life, whether past or present or future, are the ones who see their many possibilities.*

EVER SINCE we have had recorded history, there have been speculations as to the nature of man. This can be said of all forms of society of which there is any kind of translatable record. One of the common sets of speculations about man's nature is that man has a spiritual spark in him, and that philosophically this spark responds to beauty and goodness. According to this philosophical concept, the creation of beautiful things by people is an expression of the spiritual element in them.

There is another concept which might be called the modern scientific theory. It holds that, regardless of what man's make-up may be, modern psychology regards the human individual as a whole being which requires balanced development if the heights of greatest accomplishment attainable are to be reached. This new point of view on human development is becoming more pronounced in educational thinking, especially in relation to adult education, which can accomplish much in helping individuals meet the problems of adjustment to the society in which they live.

The rural handicrafts, arts, and skills cover a field which offers more and more opportunity for a full application of the psychological sciences to healthful living. They afford both a creative element and an artistic element which can contribute to balanced living and all-round health. The handicrafts, like the application of horticultural science in the promotion of individual horticultural skills through emphasis on gardening and farmstead beautification, can bring a response from that spark which is conceived of as an instinctive part of the human soul. For this reason, educational programs that give practical and common-sense leadership to the rural art and handicraft movement are likely to find popular acceptance.

In considering what handicrafts mean to the people of the United States, we must think not only of providing an outlet for the creative spark in man but of meeting the practical needs of rural people. Even though we live in a machine age and are proud of the modern inventions that contribute to a satisfactory farm life, there is a definite need for the further development of hand skills among farm families—skills in making clothing and accessories, home furnishings, food products, equipment, and the many articles that have a place in farm life. The reasons for the skills phase of the program are obvious and will vary with different individuals. One person may participate in hand work for economic reasons, another will find he can use it best as a hobby and as recreation.

Much has been done by the Cooperative Extension Service in the past 30 years to pave the way for an enlarged rural arts, skills, and handicrafts program. Many needs of rural people have been filled by helping them retain skills handed down from previous generations and helping them learn how to make things that provided comforts and conveniences. Often this could be done through simple bulletins or demonstrations. During the earlier years, before industrial manufacture supplied commonly needed home equipment and conveniences, extension programs included helps in making fireless cookers, fruit and vegetable driers, iceless refrigerators, cheese-making equipment, and other practical articles that made rural life more comfortable. Handicraft articles such as fiber hats, bags, and costume accessories were as important in the clothing program as rugs, quilting, and basketry were in the home-furnishing program.

Resourcefulness

The practical need for this type of homecraft decreased somewhat when industry was supplying similar articles at reasonable prices. But it was interesting to see, during the war, when many articles vanished from the market, a revival of resourcefulness and ingenuity in the home making of equipment needed for farming and farm living. Home-industry projects carried on by the Extension Service today take into account the practical needs of rural people, according to their background, talents, social standards, farm and home requirements, and their economic conditions.

Creative Aspects

In encouraging handicrafts as psychological and creative outlets, the Rural Arts Exhibition held under the auspices of the United States Department of Agriculture in 1937 did more than any other event to bring to public attention the great importance and wide practice of handicrafts among country people. Much credit is due to Allen Eaton, Director of the Department of Arts and Social Work for the Russell Sage Foundation, for his able contributions and cooperation given the Department in the direction of that exhibition. Under the leadership of Lucinda Crile, of the Extension Service, a Nation-wide study was made, revealing the great variety and distribution of the different crafts.

Unfortunately, these efforts were interrupted by the coming of World War II. The projects helped, however, in focusing attention on the possibilities of occupational therapy in handicrafts for handicapped veterans, and provided trained personnel for organizations working with Army and Navy hospitals. We may now hope to undertake plans for a permanent exhibit of rural handicrafts and the completion of studies begun before the war.

Socio-economic Aspects

The strength and stability of any community lie in the resourcefulness of its people and their ability to find themselves at home in a productive sense as well as in the sense of happy living. The rural community is by far a better place than the urban community to live and raise a family on a small income. As rural life in this country settles down to a period of peacetime production, there is outstanding evidence of revival of interest in the development of home crafts and skills.

Source of Livelihood

A natural incentive for many people to engage in handicraft is the desire to use their proximity to raw materials and their ability at craftsmanship as a source of a complete or supplementary livelihood. The farm and countryside provide a wide range of materials for handicraft. Woods, fibers, vines, wools, hides, clays, metals, plants for vegetable dyes and other natural resources are abundant. Couple these with an adeptness in craftsmanship, often inherent in the individual, and many a community or section of the country will find its own "acres of diamonds." Thus, people unable to earn a full livelihood from agriculture can find a supplementary income that will encourage them to stay in the community rather than trek to congested cities or parts unknown for uncertain employment.

Through efforts like the Rural Arts Exhibition, and regional exhibitions which have since been undertaken by sponsoring organizations, progress has been made in the marketing of handicraft products. Buyers of rural-handicraft items who channel these goods to the public, either direct or through established trade outlets, have found considerable demand for genuine Americana and, during the war, found such wares to be excellent substitutes for the peasant craft of other countries. Recently there have been indications that other countries would sell crafts from America.

The future of rural handicrafts and skills as a source of livelihood will depend a great deal on the successful establishment of handicraft cooperative groups to serve as market outlets between the craftsmen and the buyers. The buying public needs protection against imitations. Labels placed on true handicraft items by a responsible organization, certifying that they are hand-made, will go a long way toward overcoming the skepticism of the cautious purchaser. Then craftsmen need protection against the undue exploitation of a public desire for genuine hand-made products. Organized handicraft cooperatives can protect the consumers against excessive pricing of goods, and at the same time insure fair remuneration for the craftsmen and a continuing consumer demand.

Cooperative Guilds

Several excellent cooperative guilds now operate in these ways. The American Craftsmen's Cooperative Council, whose primary purpose is stated to be the marketing of United States craftsmen's products, is an outstanding organization of this kind. America House through which the Council markets its members' handicrafts, reports that it has done 10 times more business in its fifth year than in its first. The Southern Highland Handicraft Guild, formally organized in 1930, "to preserve and advance the arts and handicrafts of the mountains" has pioneered in craft education. The Southern Highlanders, Inc., established 5 years later, has not only encouraged handicrafts but also small industries. New Hampshire has a League of Arts and Crafts, and other guilds exist throughout the country. Each of the organizations mentioned functions as an educational as well as a marketing agency.

Market Possibilities

The lack of hand-made goods from other countries during the war, coupled with the disappearance from the market of many industrially made gifts, ornaments, and kindred items, was responsible for a considerable increase in the sale of rural handicraft products. For instance, the Rehabilitation Division of the Wisconsin State Board of Vocational and Adult Education, responsible for the operation of a handicraft program for handicapped persons, reports the following sales of Wisconsin homecraft products, through local marketing outlets maintained by the Wisconsin Association for the Disabled, for the last 5 fiscal years: 1940–41, $9,251; 1941–42, $19,100; 1942–43, $26,882; 1943–44, $43,574; 1944–45, $62,113. From January 1, 1933 through December 8, 1944, the Southern Highlanders, Inc., and the Southern Handicraft Guild had sales totaling $806,936. The newsletter for February 1946 from the League of New Hampshire Arts and Crafts reports the sale of $66,000 worth of handicrafts during the past year.

Besides the economic value of crafts as a source of income for folks with special skills and adjacent to certain raw materials, we must not underestimate their educational importance. Handicrafts offer an opportunity for balanced human development through character training, self-expression, satisfaction in the ability to make things, and fruitful use of leisure time. They are a means for the transmission from one generation to another of skills that might otherwise be lost.

Those of us who have lived through the two World Wars recall that in the first our soldiers became highly respected abroad for their mechanical ingenuity. In the second war, our GI's became world-renowned for the same characteristic. It cannot, however, be regarded as one which "just comes naturally in all American boys." This attribute, like the whole scientific and machine age that has been ushered in during our brief existence as a people, has developed from the beginning in the truly rural setting of colonial democracy.

Cultural Pattern

Our native craftsmanship, like modern mechanics, is the product of the culture known as American democracy, a way of life that has grown up around the hearthfire and the home. Its cradle was, and will continue to be, the love of community, of family, of mutual occupational interest combined to nurture an atmosphere of trust in one's neighbor. The lathe and the last, the spindle and the loom, were as much a part of this culture, as are the family-sized farm and the modern rural community of today. The continuance of this cultural pattern is something to encourage. Programs for the development of rural handicrafts can help toward insuring it in the future.

Ingenuity in the Rice Fields

By *JENKIN W. JONES. Rice furnishes a concrete example of the way new land and mechanized farming can bring an old crop to fresh successes.*

SEEDING RICE by airplanes over the water, harvesting it by combine-drier methods, bulk-handling the rough rice—these are practices that make California one of the most highly mechanized rice-producing sections in the world. Twenty years ago these methods were scarcely in men's dreams. Now they are common practices.

Large tracts of heavy soils bordering on the Sacramento and Feather Rivers are well suited to rice and they make the Sacramento Valley the principal rice-growing area of California. There is ample fresh water for irrigation. The land is relatively level, holds water well, and can be prepared for irrigation and drained at a reasonable cost. High temperatures prevail during the summer, but the growing season is comparatively short. As the temperature is likely to fluctuate widely during the heading and ripening periods, varieties that are tolerant to such conditions are grown. These are early and midseason short-grain varieties, principally Colusa for early harvesting and Caloro for the midseason.

How long has rice been grown in this valley and how much has been grown, is the inevitable first question of eastern readers. It was first grown commercially there in 1912, on about a thousand acres. By 1920, more than 160 thousand acres were harvested. Then acreage decreased to 90 thousand by 1924, but now it has expanded in response to several stimulants. In 1945 it covered 242 thousand acres of irrigated and profitable land.

Next, agricultural readers will want to know about yields. In a bad year like 1920 the average yield per acre has been as low as 51 bushels. In a good year like 1940 it has been as high as 80 bushels. The 10-year average has jumped from 59 bushels in the first decade to 70 bushels in the decade finished in 1941, with a little hesitation along the way.

In California, rice formerly was sown with a grain drill or a broadcast seeder on relatively dry seedbeds. It was alternately irrigated and drained, two or three times, to supply moisture for germination of the seed and for seedling growth. When the seedlings were 4 to 6 inches high, the land was submerged shallow and the water was gradually increased to a depth of about 6 inches. Thereafter, the land was kept continuously submerged until it was drained, just before harvesting began.

It so happens that this method of irrigation is almost ideal for the growth of weeds. They came and they conquered to an unwelcome degree. They throve abundantly—particularly barnyard grass. The fields were weeded by hand in an effort to subdue the invaders but they managed to reduce the yields of rice in substantial measure.

Seeding Changed

Something more drastic had to be done. The Biggs Rice Field Station furnished one answer. Experiments there demonstrated that barnyard grass could be effectively controlled. Two methods were worked out. The rice could be seeded broadcast on a well-prepared seedbed and the submerging of the land could begin immediately and be kept up continuously. Or, if preferred, the land could be submerged first and then the seed could be broadcast on the surface of the water, which should be from 4 to 7 inches deep. Water was to be held on the land thereafter until harvest time.

The explanation was that rice seed when resting on the surface of the soil beneath the water quickly germinates, the roots then penetrate the soft mud, and the first leaf stretches up through the water. It often floats on the surface, but the other seedling leaves emerge with more strength and stand erect, or almost erect. Meanwhile the seedlings of barnyard grass are unable to push up through the water, so they eventually die.

Futile

It's but little good you'll do watering last year's crops.

—From Adam Bede

These two methods—seeding and then continuous submergence, or seeding after submergence—are standard practices in California. This is true in the Sacramento and Jan Joaquin Valleys and in the Imperial Valley where rice is grown mainly as a reclamation crop on alkali lands.

Airplanes At It

Airplane broadcasting of the seed on the surface of the water is now a common sight over these submerged fields. The rice is seeded on water in strips about 30 feet wide at the rate of about 50 acres an hour. A single-motor plane is used that has a built-in hopper with a capacity of about 600 to 800 pounds. The plane flies at an elevation ranging from 20 to 100 feet over flagmen stationed in the field who change position after each strip is sown.

Harvesting Changed

In earlier years practically all rice in California was harvested with binders and shocked in the fields. After curing in the shock about 2 weeks the crop was threshed with stationary threshers, was sacked and stored. Practically all the binders had small auxiliary engines to operate the cutting and binding mechanisms, and were pulled by small tractors or horses. Later these engines were replaced by power-take-off attachments from tractors which pulled the binders.

Right Now

Today's farmer is one of the most power-minded enterprisers on earth. He has about two million tractors and would like a lot more. . . . Farming has become a ninety-billion dollar industry, with a cash income from sale of products not counting food consumed at home, now at the twenty-billion dollar mark.

—Clinton P. Anderson

Even so, each year large numbers of temporary workmen had to be brought in, and many additional wagons and considerable other equipment. This was cumbersome, expensive, and uncertain. Again these rice growers sought more efficient methods, for the costs of the crop were increasing perceptibly.

Let's Try

Combines seemed to be the answer this time. They had been used for years in harvesting small-grain crops all through the West. Why not rice? In 1929, a year notorious for far different reasons in the East, combines were tried on about 3 thousand acres of windrowed rice in the Sacramento Valley. Satisfaction was so great, from the growers' standpoint of reducing the need for additional labor and equipment, that in the next year 25 thousand acres were harvested with combines, and 35 thousand acres the year after that. The combines had pick-up attachments to elevate the windrowed rice into the thresher.

There were other satisfactions—and some drawbacks. Moisture content of the kernels was so reduced that safe storage was possible without artificial drying, but the rice harvested in this way was often of poor milling quality because the curing in the windrow was often uneven or otherwise inadequately done. This meant a lower market value for the rough rice.

Something More

Again improvement seemed imperative. This time an individual progressive farmer brought the answer. Mechanization again. He imported a rice drier from Italy and installed it at East Nicholas. This drier made it possible to combine direct and then dry the rice artificially. This combine-drier method saves labor, time, and exposure to adverse weather. It soon became the usual thing in the Valley. It is now also being used considerably in the southern rice fields, particularly in Louisiana and Texas.

The crop is combined when the maturing grain contains from 20 to 28 percent of moisture. It is hauled directly to the driers in bulk, where it is dried under controlled temperature conditions. It is passed through the driers two or three times thus gradually reducing the moisture, usually to about 14 percent. Between runs, the rice is stored in bins for 12 to 48 hours as this permits the moisture to become equalized within the grain. When this process of drying is properly done the milling quality is even better than that of rough rice threshed from shocks.

Driers are of various types and capacity. Large motor-driven fans force the warm air, heated usually with butane burners, through vertical or horizontal layers of rice as it moves through. During the harvest these driers operate day and night.

Meanwhile the combines in the Sacramento Valley have kept pace with improvements elsewhere. They may be either the self-propelled or the pull type. They cut swaths up to 21 feet. Both kinds are mounted either on large rubber tires or on crawler tracks and are operated by crews of two or three men. They are equipped with grain bins and, under favorable conditions, dump-trucks enter the fields and are loaded by gravity directly from the combine bins. When the condition of the land makes it inadvisable for trucks to come on the fields, large bank-out beds, mounted on crawler tracks and drawn by tractors, receive the rice from the combines and deliver it to dump-trucks at the roadside. These bank-out beds have sloping sides, a screw conveyor centered in the bottom, an elevator spout at the back. By means of a power take-off attachment from the tractor to the conveyor the rice is rapidly elevated from the beds into dump-trucks, which deliver it to the driers.

Here is an ancient crop that proverbially is grown and harvested in large part by ancient hand methods in ancient lands. Yet when it is grown on new lands by progressively new methods it responds in gratifying fashion. In our own country we have now twice shown this to be true as the crop has worked its way westward from our southeastern lowlands.

◆

We Americans are at our best when we have a hard job to do. The bigger the job is the better we do it—provided that the purpose is clearly defined. When we are thus challenged we plan better, work harder, and produce more than any other people who have lived on this earth. In peace, too, we have achieved similar industrial miracles. We must never forget that the genius of America has always been best expressed by the four simple words—All things are possible. And to me, the greatest miracle of all has always been the casual way we take our miracles for granted.

—Henry A. Wallace, *in Sixty Million Jobs,*
(Simon and Schuster)

Wood-Farm Crop with New Outlets

By J. A. HALL. *When we asked what new is going on in the Forest Products Laboratory we got an immediate reply. Probably there is always something new there—a quarterly magazine can scarcely hope to keep up with it.*

TO ME the ideal farm is found in the older settled parts of the country that men divided conveniently for occupancy before the development of that iniquitous rectangular system of survey. They laid off the land by "metes and bounds" in farms that included plow land and pasture and woods in good proportion, and put the house and barns at the foot of the slope so the products of the land flowed easily to the farmstead. Here was the industrial center, the place of handicraft manufacture that supplied most of the family needs from the produce of the land, and prepared for market the surplus above requirements on the farm.

It is a far cry from that to the industrialized, gadgeteered, and economics-ridden farm economy of today, but as long as love of the land persists in the hearts of men, that age-old combination of woods, pasture, and plow land will still constitute a farm.

What of the woods on the farm? Four million farmers own 139 million acres of commercial timber land, a potential empire in itself, nearly three times the total productive forest area of Sweden. But it is pretty universally agreed that this potential empire of forest does not produce near the volume of goods and opportunities for gainful employment that it is capable of yielding. Why?

One school of thought holds that the principal need is instruction in the arts of silviculture, education in forestry so that management of the woods can become as well based as management of the fields. It is held that this will in itself bring about the growth of volumes of saw timber, pulpwood, and other products that will insure continued good management of the woods.

But the farm does not consume its basic and most profitable wood products. It needs posts and firewood and poles and some lumber and plywood. It cannot manufacture lumber and plywood well nor fabricate its lower-quality material into profitable goods within its own economic structure. Rough lumber for some farm use can be and is manufactured on the farm, but generally, the farmer sells logs and buys lumber. His posts and firewood should come normally as a part of the processes of growing and harvesting his major timber crop, logs for lumber, pulp, and veneer. Personally, I don't think farm forestry can ever get very far if it depends on the farm wood-lot owner consuming the major part of his wood crop on the farm. If he can sell it and receive an adequate income from it, he will be interested in maintaining it.

This brings on a discussion of markets for the wood from the farm wood lot and the things that have happened in recent years to modify the outlook. The situation is far from uniform, of course, because there is a vast difference between the pineries of the South, the hardwoods of the Appalachians and Middle West, and the Douglas-fir of the Northwest. But there are some things that are common to the important forest regions. One thing is the growing realization that balanced and integrated utilization of the forest crop is the surest way to keep the forest growing productively. The most important difference between forest crops and other crops lies in this fact—the method of the harvest goes far in determining the quality and amount of succeeding crops. Let me explain:

Integrated Use

Most woods are composed of several species of trees, each of which, like all other plants, has its own peculiar preferences as to conditions under which it will reproduce and grow well. Not all species have equal value or use as wood. Normal procedure has been, therefore, over too much of the country, to cut the species in demand and leave those that had low value. The net result has been a steady alteration in the species composition of a great deal of woodland toward low-value trees. If we had cut evenly of all species, or more heavily of the lower qualities, the composition would be altered toward higher value instead of being degraded. Now, any silviculturist would call that a greatly oversimplified statement, which it is, but it also happens to be a fairly true statement.

The same general sort of statement can be made about *quality* of trees as about species. The ideal lumber tree is straight and tall and free from limbs for a long way up from the stump. Unfortunately, trees don't all grow that way and the geneticists haven't gotten around to breeding strains that are as uniform, for example, as hybrid corn. So we have cull trees of low value that take up space and prevent the growth of good trees.

Use for Low Quality

Utilization research is focusing a great deal of attention on these two phases of the problem, the utilization of lower-quality species and lower-quality trees, and there has been some progress.

Down in Knoxville there is a new kind of factory that takes low-grade oak, cuts it into thin boards, puts the knotty stuff in the middle, sandwiched between thin slices of clear wood, and builds up a serviceable floor panel. The Forest Products Laboratory and TVA worked out the process and TVA is operating it. It may offer a satisfactory method of using the large quantities of low-grade hardwoods.

At the Forest Products Laboratory there are some interesting developments in the manufacture of panels from short-length wood for use in ordinary construction. It has seemed a little unnecessary to have siding, weatherboarding, and such lumber cut always in long boards. After all, it is usually nailed up on studding spaced at a standard distance. Why not make ready-made panels of standard width also and fit them into the standard width between the studding? It works, and pretty well, too. The beauty of the thing is that these panels require only short pieces, 16 inches, and these can be cut clear in between the knots and rotten spots in otherwise cull logs. Not only that, their manufacture requires no complicated machinery and would be quite suitable for small local industry.

Then there are new pulping processes that use almost any kind of wood, so-called semichemical processes that give usable pulp from species formerly considered unsuitable for pulping. The location of mills using these processes in timbered regions will open up markets for a lot of wood that has gone unused.

Yeast From Wood

The Forest Products Laboratory is investigating a very interesting process for manufacturing feeding yeast from wood. This would be a high-protein yeast and highly suitable especially for poultry feed, as well as for livestock. The original process was being developed under Dollfuss, in Austria before the Nazis moved in. He had the idea that the wood in the hills could be used to help the feed problem of the small farmer. Technically, he was right; economically, we don't know much about it yet. But the idea is certainly attractive. If we can work out a simple process by which poor-quality wood can be transformed to sugar and then grow yeast on that sugar, and do the whole thing cheaply, we shall have made a tremendous advance. New England and upper New York and the Lake States, and the Northwest, and the Rocky Mountains would have a source of protein feed within their own economy. The process must be simple—no more complex than running a creamery—so that local folks can do the job.

Small Tracts

These are technological matters, but there is another field of equal importance in which a great deal of exploring needs to be done. Let's call it "Economic Organization for Forest Production," and explain it thus: We've got to find ways in which owners of small tracts of woods can be assured of a market through permanent utilization facilities permanently available to them. Further, technical forestry assistance must be available to them in order that their forest practices continually yield material to keep the utilization facilities going.

These are the two sides to an old problem. I hope to live long enough to see some progress made on its solution.

◆

And they shall build the old wastes, they shall raise up the former desolations.

—Isaiah 61:4.

Books

Tomorrow Without Fear. By *CHESTER BOWLES*. Simon and Schuster. New York. 88 pages.

IN THIS BOOK Mr. Bowles charts a course for the American economy which he feels certain will maintain full employment at progressively higher levels of living for all our people.

There are five key points in his reasoning. (1) America occupies a dominant place in the world economy and its economic policies are not only of great concern to its own citizens but also to people throughout the world. (2) Total spending by Government, business, and consumers, equals our national income; hence, a high level of spending must be maintained if full employment and high national income are to be maintained. (3) The Federal Government is the only institution capable of underwriting a full-employment economy and should do so at once. (4) The private-enterprise economy should be preserved; hence, the Federal Government must exert its influence to see that most of the necessary spending is the outcome of active private enterprise. (5) This influence should be exerted by promoting through collective bargaining a higher level of wages in relation to prices, by encouraging fair competition, by expansion and improvement of public facilities and services, by adequate support of farm incomes, and by expansion of international trade. As Mr. Bowles points out, the main ideas have appeared before in other publications.

The great merit of the book, in the words of another reviewer, is that “it is written in language the layman can understand.” For one who disclaims being a “professional writer” or “a practicing economist,” Mr. Bowles has done a brilliant job of putting in simple language the Keynesian explanation of depressions and their cure.

But there are a few points in his common-sense exposition concerning which the skeptical layman might ask for further clarification. He says that businessmen periodically reduce their spending because of “a thousand and one things. Would it have been possible to explain this a little more clearly? And when he says that if the Government will follow his proposals, the Federal budget could be balanced over a period of years, some will surely wonder whether that period might not be too long. It is doubtful whether this problem as it relates to the Federal-debt bugaboo can be explained to the satisfaction of skeptical laymen. In any case, Mr. Bowles' effort seems to have been one of the best yet made.

Despite the general optimism, he indicates at many points doubts as to whether the American people will, in fact, follow his proposals.

—*Bushrod W. Allin*

EDUCATION FOR USE OF REGIONAL RESOURCES: RESEARCH TRANSLATION AND REGIONAL RESOURCE USE EDUCATION. Sponsored by the Committee on Southern Regional Studies and Education of the American Council on Education. (Washington, D. C.) 129 pages.

THE COMMITTEE on Regional Studies and Education, formed by the American Council on Education in 1943 to search for ways of obtaining the translation of significant research findings into useful instructional materials for schools, now issues this second report. Its first report *Channeling Research Into Education,* summarized the Committee's efforts up to and including the Gatlinburg Work-Conference held in 1943.

The present volume is an attempt to share the experience of the 1944 Conference with the largest possible number of educational and research specialists. About 100 representatives of State and regional agencies for education and research attended. State participants included: college presidents, State superintendents of education, deans of education, Directors of State planning boards, conservation departments, and State education associations, and research specialists in economics, forestry, agriculture, biology, population, and labor problems. The regional representatives were from research organizations, regional offices of federal agencies, and professional educational associations. Among consultants were Paul B. Sears, Oberlin College, Harcourt Morgan, TVA, and Howard W. Odum, University of North Carolina, Editor of *Social Forces.* These men prepared materials for the conference and entered fully in discussions with the conferees.

Perhaps most readers will find the contributions of these specialists which appear in Part II *The Specialists Speak on Resource Use and Regional Development* the freshest and most stimulating part of the volume. These 42 pages in themselves are a good example of the translation of specialized knowledge into lay language. They deserve to be widely read by all who are concerned with the effective use of resources, whether they are engaged in education or research.

Parts I and III will be of interest primarily as a report for conference participants. They offer abundant evidence that a generous degree of energy went into advance preparation for the conference—and that during the meetings subcommittees worked industriously. But readers who did not attend the conference may question the proportionate emphasis on conference mechanics in relation to the materials which deal with the actual substance of the problem.

In *Channeling Research Into Education* and in this *Education for Use of Regional Resources* the Committee on Southern Regional Studies and Education has outlined a problem which is of national significance. It is worth noting that the increasing activities in resource-use education in the Southern States are currently reported in the newsletter "Resource-Use Education," the first number of which was issued from the Committee's office in Chapel Hill, North Carolina, in September 1945.

—*Mary U. Rothrock*

COUNTRY FLAVOR. By *HAYDN S. PEARSON.* Whittlesey House. New York. 112 pages.

DISCRIMINATING readers will find joy in this modest volume for it is a thing of beauty as to format, printed page, pictures, and the choice and precise English in which the author writes of the country scene and country life. Haydn Pearson knows country life with all his faculties, and he has given us word pictures that will not soon be forgotten. The illustrations—29 of them by three artists—are perfect companion pieces to the short essays, and beautiful in themselves. The author evidently has artist friends who feel just as he does about country life but who register their love for it through a different medium. The author draws word pictures to linger in the mind's eye when he writes of the red-gold of October, the browns of November, the greys of December, and the lingering scarlet sumac plumes—"a splash of color on the painting of winter."

The high point, however, for most readers who know farm life, or would like to, lies in the fair and just description of the farm tasks—picking stones and carrying them off in a "stoneboat," the good work of plowing which makes one glad that he lives in the country "where a man's eyes can rise to beauty," swinging a scythe for "to watch a master mower in action is to see the poetry of motion," "raking after," milking, cutting and hauling wood and many other operations.

Throughout, the country life described is New England, though many aspects of it are common to country life elsewhere. The most characteristically New England, are the essays relating to culinary matters—"Red flannel hash . . . is a taste tantalizing dish . . . its color is exciting . . . it has allure and snap." How to make it? An exact recipe follows. The decline of beef stew brings "perturbation" to the author. "The making of beef stew should be approached in a leisurely manner and with full concentration. . . . If one is disquieted about the stock market he cannot receive all that beef stew has to offer." Then follows the recipe. "After the stew is cooked it should be set aside to cool. It is the re-heating that brings out all the subtle nuances, the utterly delicious and the completely satisfying flavor."

Those who believe that the types of agriculture practiced in the United States have had a great deal to do with the evolution of the strength, self-reliance, and endurance of the American character will find much to support this belief in this small volume and at the same time will provide themselves with a few hours—too few—of pure delight.

—*Mary G. Lacy*

◆

The greatness of a people is no more affected by the number of its inhabitants than the greatness of an individual is measured by his height. Whoever presents a great example is great.

—Victor Hugo

Success on the Small Farm. By *HAYDN S. PEARSON.* McGraw-Hill Book Company. New York. 285 pages.

"A Brook of Our Own"—A Few Notes From the Files of a Mountain Real Estate Office. By *MARJORY GANE HARKNESS* Alfred A. Knopf. New York. 200 pages.

HAVING READ Mr. Pearson's countryman pieces in the New York Times, one expects a certain flavor of romance from him on this subject of farming. But the avowed mission of this book is to set forth a practical, definite blueprint for making a net cash income of $2,000 to $3,000 a year on 6 to 10 acres.

The core of the blueprint is a Six Months Plan. You work hard from May to October raising and selling asparagus, strawberries, raspberries, sweet corn, melons, and squash, in that order. The other 6 months you can take it easy. You sell in a roadside stand, preferably. There is a chapter on each crop: Strawberries $500 an acre, Asparagus $500 an acre, and so on; and he tells you how to do it. There are pointers for beginners, and other considerations. Incidentally, a chapter on dairying, probably the weakest, gives advice which, if faithfully followed by novices, would probably leave nine out of ten broke and disillusioned in 5 years. There is a self-testing score card, so you can tell whether you are cut out to be a farmer.

Strong points are the excellent style of writing, the straightforward attempt to spell out an over-all business plan for a small farm, and the giving of detailed know-how of handling the crops. It displays more than ordinary insight and common sense on many farm matters. Its weakness lies in its confident promise of good income from the plan; its lack of due emphasis on capital, location, experience, and other vital requirements; and its failure to give due weight to pests, crop failure, repairs that can close the highway (and trade) for weeks; occasional low prices; and other unforeseen hazards.

Summed up, amid the flood of how-to-farm-it books, this stands out among the good ones. It is practical on most details and it is pleasant reading.

SNUGLY NESTED in the mountains of New Hampshire, a feminine Yankee traffics in the capital goods of that region: Brooks, ponds, blueberry hillsides, vistas of Chocorua and the Sandwich Range. She receives much eager wampum from Boston, Baltimore, Florida—teachers, summer-homers, back-to-the-landers—satisfying their yearnings. Manifestly, a business of pleasant adventure, not to mention the ten percent.

Mrs. Harkness now has made her files yield this additional dividend, and a sprightly little book it is. Well, written, entertaining, presumably all true. But perhaps there's just one little note here that may grate gently upon some souls, like a discord in Lohengrin. If you've paddled incomparable Winnepesaukee, fished the Rocky Branch of the Saco, or climbed the horn of Chocorua, you may feel slightly disillusioned at hearing Eden evaluated by a realtor—even an understanding realtor.

—*A. B. Genung*

ECONOMIC RECONSTRUCTION IN YUGOSLAVIA. A PRACTICAL PLAN FOR THE BALKANS. By *GEORGE RADIN*. Published for the Carnegie Endowment for International Peace, by King's Crown Press. New York. 161 pages.

ASSISTED BY EXPERTS in the fields of agriculture, economics, rural power development, cooperative practices and education, who are not named because they are employed by the U. S. Government, George Radin has written a book that is a valuable contribution in the field of rehabilitation. It will be even more valuable as a guide toward long-range reconstruction, as many of the projects outlined could hardly be developed and completed in a few years, even under more satisfactory conditions than those prevailing today.

The preface by an eminent authority on international relations, Dr. James T. Shotwell, of Columbia University and the Carnegie Endowment for International Peace, stresses the value of the zadrugas, the old patriarchal family system of the Slavs upon which much of the modern Balkan cooperative system is based, as agencies for carrying out the recommended practices. Mr. Radin's vivid description of reconstruction problems facing Yugoslavia and his experiences in this field after World War I make a pointed introduction to the problem.

The book contains 17 projects ranging from crop improvement and poultry management to farm home living and rural health improvement. Technically, these programs are admirable. They are written from an American's viewpoint, however, and the examples are drawn from this country.

A brief chapter, "A System of Agricultural Education and Research after an American Model," merely outlines in an effective though general way what has been done in the United States. It might have included examples of the numerous successful research and extension projects actually carried out by the scientists and peasantry of Yugoslavia and other Balkan countries, for outstanding achievements have been secured in some of the fields covered by the proposed projects. They would have enriched the book, made the 17 proposals more meaningful, and given Yugoslav scientists and farmers due credit for past achievements won with admittedly inadequate resources. Despite these omissions the book merits the careful reading of those who are interested in rehabilitation and reconstruction.

—*Clayton E. Whipple*

The shortage of books in the world today is tragic. . . . All good books throughout the world must now be cherished, none wasted. We must collect them, place them where they will do the most good . . .

—VIRGINIA GILDERSLEEVE

God Made the Country. By *EDWIN TOWNSEND BOOTH.* Alfred A. Knopf. New York. 330 pages.

THE MAIN THEME of this delightful and stimulating volume is the significance of the rural way of life for the classic literature of European civilization and the meaning of this way of life for some of the outstanding creators of this literature. The author points out that European literature began with Hesiod, the dirt farmer of the eighth century B. C. who composed *Works and Days,* and that from Hesiod to the present the soil has nourished mankind both physically and spiritually. Much has been said in a general fashion about the farmer as the base of civilization, but it has remained for this study to sketch in broad expanse the relationship of the earth to the works of men of letters.

This series of essays in literary history and criticism reinterprets the lives and works of several of the main figures in literature with reference to the author's main theme. The writers are considered in chronological order, beginning with Hesiod, Xenophon, Horace, and Vergil and concluding with Emerson, Hawthorne, Melville, and Tolstoy. There are essays concerned with Ausonius, Sidonius, Madame de Sévigné, Voltaire, Alexander Pope, Horace Walpole, Thomas Gray, Lord Bolingbroke, James Thomson, Lady Mary Wortley Montagu, William Cooper, the Wordsworths, the Carlyles, Thoreau, and Alcott.

Many of the seemingly austere and vaguely understood figures of our literature courses here become human beings when delineated with reference to the rural settings where they did much of their creative writing. Few realize that Voltaire spent more than forty years of his long life in the country. Lady Montagu among her bees, silkworms, and grapevines is a distinct contrast from the traditional portrayal of her as a bluestocking in the drawing rooms of London and the salons of the Continent. The Carlyles at Craigenputtock cease to be gloomy and forbidding. The titanic craftsman of *War and Peace* is revealed as an enthusiastic and genial country gentleman. Perhaps most striking of all the reinterpretations is the portrayal of Melville as he lived within view of beautiful Mount Greylock while he created *Moby Dick.*

As implied in the title, the book includes a philosophical defense of the virtues of rural living. Some readers will contend that certain of the writers here considered sought refuge in country quiet because of economic necessity or otherwise, and not primarily because they had experienced all that urban and industrial life had to offer and had sickened of it. Regardless of what the individual reader's reaction may be to the manner in which this philosophical theme is treated, the book deserves to be read, re-read, and reread again.

—Everett E. Edwards

Seasoned life of man is preserved and stored up in books.—Milton

SELECTING AND OPERATING A BUSINESS OF YOUR OWN. By *GUS LARSON, ROBERT H. JOHNSON, and WALTER M. TELLER.* Prentice-Hall, Inc. New York. 364 pages.

HERE IS a straight-forward, simply but well-written primer covering not only small urban enterprises, but also rural business and farming opportunities. Its diversity and time-and-effort-saving suggestions make it a valuable current addition to the numerous Government manuals and other publications designed primarily for service veterans and others who are planning to establish and operate a farm or small business. Its coverage is greater than its depth; nevertheless, a serious study of the book would reduce the number of failures.

Following several chapters of generalizations on basic and important essentials, the authors give fairly detailed pointers, ideas, and practical helps about a wide variety of businesses, many of which are indirectly related to the distribution of agricultural products, such as grocery stores, bakeries, apparel shops, restaurants, and saw mills. Problems of planning, location, facilities, buying and selling, advertising, labor, legal assistance, and record keeping are briefly discussed for each type of business.

A discussion of farming in general, part-time farming, farm-service business, and agricultural opportunities in Alaska takes over the latter part of the book. The chapter on farming as a small business includes brief discussions on the aptitudes of the prospective farmer, kinds of farming (truck, poultry, fruit growing, dairying, stock farming, cotton, diversified, ranching, etc.) capital requirements, and possible income. The advantages and pitfalls of combining a little farming with a job or business are reviewed. A comparatively new field for small business is described—farm-service business including dusting and spraying services, well drilling, trucking, conservation work, rural electrical servicing and sales, farm building and repair services, and machine shops. The authors point out the limited farming opportunities in Alaska.

A short list of books and pamphlets for additional reading is given at the end of each chapter.

—Floyd J. Hosking

◆

FOOD STILL FIGHTS FOR FREEDOM

Southern Horizons. By *WILLIAM HAYNES.* D. Van Nostrand Company, Inc. 250 Fourth Ave., New York. 316 pages.

SOUTHERN HORIZONS is a book about the wonders—past, present and future—of chemurgy. According to its author, chemurgy means agricultural production for industrial uses and, he says, the South has been making its living out of it since colonial times. Actually, the book deals with many raw materials other than those which are the products of our farms—sulfur, helium, phosphate, bauxite, barium, mica, magnesium, iron, and coal. All together they give quite a glow to Southern Horizons.

In this descriptive and interesting volume (easily read in an evening) the author takes as his theme "Southern resources developed by Southerners for the benefit of everyone." The book, he says, "needed to be written," if for no other reason than to call attention to "the new spirit that today inspires the South." It is just as well that it has been written by "a Damyankee from Connecticut"—especially one with the qualifications of Mr. Haynes. Southerners are too modest to tell the truth about their resources and nonsoutherners would not believe them if they did.

Three chapters are devoted to cotton and its competitors, two to oil crops, three to products of our forests, and one each to mineral ores and water power, gas and oil, silk and ramie. A chapter on "Chemical Treasure Trove" is a fascinating summary of almost unbelievable accomplishments through industrial chemistry in the South and even greater things to come. Closing chapters reveal some ideas in the making and emphasize that education and research are the solid foundations on which the future of the South—or any section—must be built.

In spite of several inaccuracies the opening chapter "Revolution in the South," is to this reviewer the most significant in the book. Fred McDonald's quoted contrast of Southern and New England business methods is a masterpiece in description. The new spirit being created in the South here characterized as "quite the most important change—in the past two decades, possibly the greatest change since the bitter days of Reconstruction," is undoubtedly the principal feature in the southern horizon and overshadows any chemurgic development, actual or in prospect.

The thoughtful observer, however, finds it difficult to believe that the war "brought more new jobs and fresh dollars to the South than to any other region" or that "most Southerners, in all sections and from every stratum, reject scornfully the entire New Deal philosophy." The critical comments with respect to "TVA's well advertised successes" and the lengthy diatribe against "Government research" appear to be both far fetched and unwarranted.

—*G. H. Aull*

Living by the Land: Conservation With Special Reference to Proper Use of the Land. By *JOHN C. GIFFORD.* Coral Gables, Fla. 139 pages.

IN THIS attractive small book there is a wealth of interesting and at times useful observations and comments by a naturalist who has had a long career as teacher of forestry and conservation. Forty years ago he was professor of forestry in Cornell University. Now, in a climate "tropical" by contrast with that on the shores of Lake Cayuga, he is Professor of Tropical Forestry and Conservation in the University of Miami.

The author seems to give the impression that he is writing for all the forested regions of low latitudes and altitudes, with high rainfall — the "humid tropics." However, such statements as "residents of tropical Hispanic-America who understand the area in which they live do not try to maintain lawns" suggest that his experience in tropical regions has been limited to older settled portions. But he gives sound advice when he says "To succeed in living in the tropics, settlers from the North must adapt themselves to new surroundings, rather than attempt to change the surroundings to suit themselves."

There are stimulating suggestions as to "subsistence silvicology" on forest farmsteads. The author also rightly emphasizes the place of trees in "tropical" land use, and the importance of forest tree—forest soil relationships, pointing out that transition from wild forest to planted forest should, if possible, be made without seriously disturbing the soil. This is particularly true in the humid tropics proper where the soil, after the "wild" forest has been cleared, may be almost sterile. But I doubt that Dr. Gifford has experienced or seen the terrific difficulties of a white settler in humid tropical virgin-forested regions where the transportation is limited, for example, to a hollowed-out log, paddle-propelled, on a treacherous river. Is not he really writing about and for the well-to-do, or at least well-set-up, American who is living in Florida?

Ownership of the land by those operating it is emphatically endorsed by the author. To those who have seen some of the appalling consequences of the relationships between the landed gentry and the peons in such countries as the Philippines, which have had the Spanish cultural traditions imposed upon them for centuries, this question is of particular significance.

In conclusion: Dr. Gifford's stimulating consideration of the extremely important subject of "living by the land" would be more helpful and less misleading if he had written more exactly as to regions, rather than attempting to treat of "tropical" regions as a whole when he was really writing for Floridians—would-be and present.

—Robert L. Pendleton

LAND TITLE ORIGINS. By *ALFRED N. CHANDLER.* Robert Schalkenbach Foundation. New York. 550 pages.

CONCENTRATING on the social and economic aspects of the origin, nature, and transfer of property rights in land, this volume provides a needed supplement to the histories of the colonial period.

Beginning with the exploration of America, land rights were established through prior discovery and force. Land, either claimed or unclaimed by the Indians, quickly became the personal property of European monarchs who with "the mere scratch of a goose-quill" transferred it to court favorites or others who would contribute to the aggrandizement of the Mother Country. The author's thesis that "mass migration of Europeans to America was caused, not by widespread desire for religious freedom as often declared, but, as here shown, by craving for land, and to escape the poverty in Europe emanating from feudalism" is carefully developed and well stated.

Tenure systems in each of the original colonies and special sections like Texas and the Oregon country, constitute the body of the volume. The terms "indentured servants," "quit rents," "land speculation," "land frauds," "unearned increment," and "land grabbers" suggest the topics emphasized throughout the study.

The content of the book is considerably broader than the title would indicate. Origins of Land Policies would seem to be appropriate to the materials presented. The sub-title used, *A Tale of Force and Fraud,* is indicative of a prevalent undertone, yet the general tenor of the analysis is rather objective. Studious attention is given to detail and there are 174 bibliographical references. The Epilogue contains forceful quotations from statesmen and writers that are of value to students of our landed institutions.

—*John F. Timmons*

U. S. GOVERNMENT PRINTING OFFICE 1946

LIBRARY
CURRENT SERIAL RECORD
OCT 3 1946
U.S. DEPARTMENT OF AGRICULTURE

We can gain no lasting peace if we approach it with suspicion and mistrust—and with fear. We can gain it only if we proceed with the understanding and confidence and courage which flow from conviction.

—FRANKLIN D. ROOSEVELT

Reserve
1
Ec7La

Land policy REVIEW

LIBRARY
CURRENT SERIAL RECORD
★ DEC 23 1946 ★
U. S. DEPARTMENT OF AGRICULTURE

Contents FOR WINTER 1946 *Vol.* IX, *No.* 4

Page
Transferring Farms in Families . . *John F. Timmons* 3
Regional Research Laboratories . *Louis B. Howard* 8
Action Programs in Nutrition . . *Robert H. Shields* 13
Toward a World Food Program . . . *Henry Jarrett* 17
Yearbooks Reconstituted. . . . . . *Alfred Stefferud* 23
Books . . . . *Oscar Zaglits, Lydia Ann Lynde, Lois Olson, E. J. Working* 26

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS

Contributors

JOHN H. TIMMONS is a frequent contributor to the REVIEW. A land economist in BAE, he is also involved in research in matters relating to tenure in connection with the several regional land tenure research committees.

LOUIS B. HOWARD, Chief of the Bureau of Agricultural and Industrial Chemistry, spoke to the Agricultural Outlook Conference on the work of the Regional Research Laboratories and was at once asked to give the substance of that talk to our readers.

ROBERT H. SHIELDS, Administrator of the Production and Marketing Administration, contributed his talk almost as it was given at that Conference.

HENRY JARRETT is Assistant Director of Information of the Food and Agriculture Organization of the United Nations.

ALFRED STEFFERUD is now the editor of the revived and redesigned Yearbook series published by the USDA.

OSCAR ZAGLITS, of OFAR, is in charge of the Finance and Trade Policy Section; LYDIA ANN LYNDE is Extension Specialist in Home Economics; LOIS OLSON, an economic geographer, has been in the Office of Strategic Services since early war days; E. J. WORKING, Professor and Chief in Agricultural Economics, University of Illinois, in recent months has been Visiting Research Professor at the School of Business, University of Chicago.

An Index to volumes 8 and 9 of the LAND POLICY REVIEW will be sent on request

LAND . POLICY . REVIEW

Land Policy Review is published quarterly by the Bureau of Agricultural Economics, U. S. Department of Agriculture, with approval of the Bureau of the Budget. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., 10 cents a single copy, 30 cents a year; 40 cents foreign.

Transferring Farms Within Families

By JOHN F. TIMMONS. *Tenure has been recognized as a basic study since agricultural economics had its organized beginnings, and long before. Yet in its several forms and aspects it continues to offer fundamental problems in many lands, including our own. This author now considers phases that confront every farm owner, sooner or later.*

FARM TRANSFERS within families constitute an important segment of our land-tenure process, even though the American system demands that channels to land ownership must always remain open for young farmers whose parents do not own land. The old saying that the surest way to acquire a farm is to inherit or marry one has a great deal of truth in it. And judging from experiences of other countries and older parts of our own country, we may expect farm transfers within families to become even more numerous as the country becomes older.

Right now, an unusually large number of farm owners and their prospective heirs are searching for the best ways of transferring the home farms. For more farmers now own their farms than ever before. Mortgage debt is at the lowest point in 30 years, so more owners have larger equities to transfer. Furthermore, during the war farmers remained on their farms as active operators beyond their normal retirement age. As their sons and daughters return home from the military services and war plants the need for arrangements whereby the younger generation can get started farming as the older generation retires becomes acute.

The process of transferring farms from one generation to the next is fraught with many problems, some of which are serious. All too frequently the death of the owner is followed by the disintegration of the farm as a going unit of production. The farm is sold to settle the estate, or the land is divided among the heirs into uneconomic units, or the heir who buys out the others must mortgage the farm excessively, or life-interests of various kinds arise to plague the continuity and stability of the ownership and operation of the farm.

Breaking up the farm as a going concern at the death of the owner is probably the most serious of these problems. All farm communities bear scars of sales made to settle estates. These dispersement sales destroy the going-concern value of prosperous well-organized farms by scattering to the four winds the machinery, herds, and other forms of capital. The new operator must repeat the costly and inefficient process of reassembling the necessary productive factors into a balanced and profitable farm organization.

Another problem is associated with our general expectation—right or wrong—that farms should pay for themselves in each successive generation. For except when a farm is inherited by one heir, farm transfers within families usually necessitate recapitalization of the farm, in whole or in part, each generation. Normally, as several heirs share in a farm, the heir who remains on it goes in debt for that part of the farm that is not included in his own share of the inheritance. In times of inflated land prices, like the present, estate settlements often saddle the heir-operator with a debt that is beyond the long-term earning power of the farm. This is one of the main reasons for farm mortgages, particularly in older parts of the country where transfers within families are more numerous.

The American ideal of owner-operatorship is further affected by the annual transfer of around a billion dollars of farm wealth to urban residents partially offset by transfer of urban wealth to farm people and by the transfer of farms from landlord father to landlord son.

Expected Objectives

Farm transfers within families should be viewed in the light of the expected objectives. Generally speaking, farm transfers within families should transfer economic farm organizations from one generation to the next with a minimum of problems. During this process the essential unity of the farm as a going concern should not be seriously disturbed. Ownership by the member of the younger generation should be obtained early in life while his enthusiasm is high and his physical vigor is strong. When owner-operatorship must be temporarily delayed and tenancy must be accepted as an intermediate stage, the conditions surrounding the tenancy should be as favorable as practicable to the welfare of the owner, to the security and living conditions of the tenant, and to the productivity of the farm. In the process of transfer, the younger generation of farmers should benefit from the experience and judgment of the old, yet the older generation should be fully protected during their declining years.

Parents' Security

Perhaps the most important single objective of farm transfers within the family relates to the security of the parents. This is recognized by State laws of descent as well as in most wills drawn by or for farmers. According to State laws a widow may not be deprived of her dower interests in her deceased husband's lands. Most farm wills or other farm transfer arrangements provide for parents' income and security during old age—together or as a survivor. Yet, almost every farm community can point to an example of parents who have impoverished themselves to give their children a start in farming. To the degree that their security is achieved much mental as well as physical suffering by the parents may be avoided and they can enjoy the independence they have earned and now deserve.

Equitability

Equitable treatment of the children is the second major objective in farm transfers within families. But unfortunately the concept of equality, so deeply ingrained in American culture, is frequently substituted for the principle of equitability. As a result, the children or other heirs are not rewarded in proportion to their individual contributions to the welfare of the farm and parents. Moreover, equality of division—not equitability—guides our laws of descent. Even farm owners are reluctant to will or otherwise transfer property to their cnildren on any basis except equal division for fear of creating ill will or jealousy among the heirs.

Basic Difficulties

Many problems associated with transferring farms within families grow out of two basic characteristics of rural families and their farms. Farm families have an average of three or four children while farms average only 195 acres in size. Most farms are too small to be divided among the several children without creating tracts of uneconomic size, or tracts with heavy mortgages, or both.

> *Speak to the earth and it shall teach thee.*
>
> —Job: XII: 8

Problems of transferring the home farm are aggravated by conflicts among the basic purposes. The generally accepted purpose of equality is in conflict with the purpose of equitability based upon what each prospective heir contributes to and receives from the farm. The desirability of transferring the farm to the younger generation early in life of the young people frequently conflicts with the parents' purpose of providing for their own old age. Few farmers can save enough to retire and hand the ownership as well as the operation of their land over to their children. So the son who remains on the farm is never quite sure of his position. His tenure may come to a sudden and disastrous end at the parents' deaths when other heirs push for a settlement of the estate. Lacking surety of expectations, the son has little more incentive to build up the farm than the usual tenant who has only an annual lease.

Even the most succcessful father-and-son partnership may end in disaster if no property transfer arrangement is worked out as the foundation for the farm operating agreement. The son or son-in-law who is in the process of taking over the home farm without such a property transfer arrangement is left in a predicament when the parents die and the farm is distributed among all legal heirs according to State laws of descent.

Alternative Methods

Alternative methods of transferring farms within families include gifts, annuities, wills, laws of descent, purchase contracts, and sales of farms from parents to children. Numerous procedures and variations within these major methods are being used by farm owners. Choice of method is necessarily influenced by the objectives to be achieved and by the conditions surrounding the transfer such as number of heirs, amounts of land and other property, and the economic position of the parents.

Gifts

If an owner can afford to, he may distribute his lands among his heirs during his lifetime. This practice, sometimes called premature inheritance, gives the heir control over the land at an earlier age than he would have it through a will or a law of descent. Gifts of land are increasing as inheritance and estate taxes grow heavier.

Unfortunately most farm parents cannot afford to transfer lands among their heirs during their lifetimes. Circumstances demand that they retain ownership of their property, to provide them the income they will need during old age. They must search for alternatives that are more in keeping with their circumstances.

Personal

The land a man works with his own hands is as personal to him as the clothes he wears.

—George Sand

Annuities

An annuity may enable an owner to turn over qualified ownership of land to his children, yet retain annual income rights for himself and his wife. The annuity principle has long been used in insurance to provide a person with a fixed annual income for the rest of his life. To a limited degree annuities have been used in land transfers in the form of "bonds of maintenance" or "Bohemian contracts"—contributions to our land system from Central Europe.

Analogous to annuities for the parents are interest-bearing loans made by the parents to each of the children with provision in the notes that all or a stated amount of the indebtedness is to be cancelled automatically within a period of weeks following the decease of the longer living of the two parents.

The possible use of annuities should be examined by more farm owners, for they have much to offer in the interests of promoting the security of parents, the welfare of their children, and the continuity of the organization of farms.

Wills

Farm owners may will their lands to whom and in such manner as they please with only two important exceptions. The husband cannot defeat the dower rights of his wife. Land owners cannot impose restrictions upon future generations through entail, primogeniture, and other remnants of feudalism.

The use of wills permits parents to retain ownership right up to the moment of their deaths and then to distribute their property as they wish. Scattered studies indicate, however, that the majority of farm owners do not prepare wills. The reasons offered for not using this privilege include inertia, superstitions, and lack of knowledge of the alternative transfer practices in line with the needs of land owners.

In taking advantage of the privilege of transferring land by will, the owner must follow certain procedures prescribed by law. He must be of legal age, and of sound mind. The will must be in writing and be signed by the testator before witnesses. Wills may be changed as often and as much as the maker desires as long as these legal requirements are met. Family changes in the form of marriages, births, and deaths and changes in the family's economic position demand that wills be reviewed every year or so and revised whenever necessary.

Laws

In case a farm owner fails to make arrangements for transferring his property, it is distributed by the State laws of descent among his widow and children, or other legal heirs. In theory, these laws take effect simultaneously with the owner's death since land cannot be without an owner under our system of private property. In practice, the probate court ascertains the legal heirs shortly after the owner's death.

Laws of descent differ considerably from State to State, but the widow's welfare is always protected through dower rights—generally a life interest in one-third of the deceased husband's land. Some States also provide for the widower's welfare in the form of curtesy rights. All remaining interests in land are distributed equally among the children. Or, if there are no children, the land goes to other next of kin.

But Soon

Satisfactory farm transfers within families are not easily achieved. They are subject to the many human emotions and sentiments which reach their peak in family relationships. Because of the delicate human relationships involved, it is difficult for families to face with objectivity and foresight the question of transferring their homes and their farms. They are not likely to know about and to weigh carefully the various alternatives open to them. They are prone to delay matters. But today's swift-moving events demand that farm property arrangements—the institutional basis of American agriculture—be kept sound and continuous. This, in turn, requires that farm families give careful study to alternative farm transfer arrangements and the probable results of each upon their individual family conditions. To be effective this study should be followed by prompt and effective plans and action for carrying out these family decisions. This action is demanded by the future welfare of the family, the farm, and the rural community.

THE *Four Regional Research Laboratories*

By LOUIS B. HOWARD. *A certain fascination always lurks in the possibilities of extending the uses of raw products, developing valuable byproducts, and utilizing wastes or near wastes. The four Regional Research Laboratories, established under Congressional authorization a few years ago, can list some noteworthy achievements in these fields.*

FOUR Regional Research Laboratories were established primarily to search for new and wider outlets and markets for agricultural commodities in the fields of industry and foods. The Department of Agriculture had been searching for industrial outlets for farm products in a limited way for perhaps 30 years, but somewhat as a side line. The chemurgic movement in the late twenties advocated the industrial utilization of farm crops, and some other public and private agencies and some State Agricultural Colleges were interested. But the interest was more or less sectional or spotted until the heavy surpluses of farm crops began to beat down prices in the early thirties. In 1938, the Congress authorized the Secretary of Agriculture to establish these large research centers for work in such utilization. This marked the beginning of the Federal Government's entry into the industrial utilization field on a large scale.

One well-equipped and well-staffed laboratory was established in each of the four major farm producing areas of the country. They are located at Peoria, Ill., for the North Central States; at New Orleans, for the South; at Philadelphia, for the East; and at Albany, in the San Francisco Bay area, for the West. They are operated by the Bureau of Agricultural and Industrial Chemistry of the Agricultural Research Administration, and work began in them in 1941.

The research on the production of synthetic liquid motor fuel from agricultural residues or so-called farm-waste materials is rather well known. The process calls for the chemical conversion of corncobs, sugarcane bagasse, peanut shells, flax shives, and cottonseed hulls into liquid motor fuels and other commercially valuable products. A new factory-type building on the grounds of the Northern Laboratory now being equipped, will be in production by the end of this year. It is estimated that probably half of the 200 million tons of farm waste produced in the United States each year might be available for use in making motor fuel. Corncobs will be the first waste material to be tried in this new plant.

Down in the Florida Everglades a large sugar corporation has started large-scale production of sweetpotato starch in a new factory which is the largest of its kind in the world. This was built on the faith the company officials had in the work on sweetpotato starch the Bureau of Agricultural and Industrial Chemistry has carried on for more than 10 years. Scientists in the Southern Laboratory, where the sweetpotato utilization work is done, supplied a great deal of the technical information needed in the construction and initial operation of this new plant, which will consume the annual crop from around 12,000 acres of sweetpotatoes. A bushel of these potatoes produces from 10 to 13 pounds of starch and about 5 pounds of cattle feed. The cattle feed contains from 85 to 90 percent of the feeding value of corn, and is fed along with other mixtures to more than 2,000 head of cattle that are being continuously fattened on the company's holdings.

Penicillin Pronto

Fortunately these laboratories were completed and staffed in time to aid in wartime research. Here are found some dynamic results. More than 150 research projects dealing with the use of agricultural commodities in the war were carried on. Scientists in the Northern Laboratory quickly increased the yield of penicillin so it could be produced on a commercial scale. They did this by feeding the mold that produces penicillin a new diet composed mainly of two agricultural products—corn-steeping liquor, a byproduct from the manufacture of cornstarch, and lactose or milk sugar. The value of penicillin produced in 1945 is estimated at more than 100 million dollars, but no money value can be placed on the human lives saved as a result of the large-scale commercial production made possible by the laboratory scientists shortly after our entry into the war.

On the Way

> *More than a man can carry comfortably is a man's share—there is so much to be carried. We ought to stagger at times but not to stagger long-faced.*
>
> —W. C. Gannett

Stronger Tires

Wartime research in the Southern Laboratory showed that better tire cord can be made from cotton by using varieties of cotton selected specifically for this purpose on the basis of their physical properties. Passenger-car tires made from standard and improved cotton cord ran more than 68,000 miles, with one recapping, at a sustained highway speed of 60 miles an hour which, as readers well know, cuts the rubber off a tire pretty fast. These tests were made by the Army Ordnance Department at its proving grounds at San Antonio. In light truck-tire tests, in rear-wheel positions, tires made from a selected variety of cotton gave 300 percent more mileage than tires made from regular commercial cotton cord.

This research shows that the time has come for us to begin to give more thought to the selection of varieties of cotton and other crops that possess the characteristics needed for the things we want to make. That is particularly true of crops grown for industrial purposes.

Soft-Grit Blasting

At the beginning of the war the Navy was using hominy grits for cleaning carbon from the engines of its aircraft. As hominy is a food, we were asked to search for a nonfood material that could be used for this purpose. One of the laboratories developed a soft-grit blasting material made from corncobs and rice hulls, both largely waste products of the farm. The mixture is composed of 60 percent ground corncobs and 40 percent whole rice hulls. It is used in regular air-blasting equipment.

This new method has several advantages over previous methods of cleaning. It removes carbon, oil, and other deposits and gives the metal a clean, dry surface without grinding away or reducing the size of the cleaned parts, and it works about 10 times faster than the hand method. As a result of this research, first on a laboratory and then on a pilot-plant scale, the soft-grit blasting method is now going into commercial use. One large company that rebuilds automobiles has adopted it for cleaning pistons, fuel and water pumps, and carburetors. Another company is using it when cleaning aluminum foundry cores, a glass company is using it to clean glass molds, and a large oil company is using it for cleaning paint from the roofs of its huge gasoline storage tanks—for the soft-grit material does not produce sparks.

Under normal conditions this country uses many brushes of many kinds. Before the war, imported hog bristles were used extensively in the manufacture of some of these brushes. Imported bristle from China has been better than our domestic-produced bristle. One of the laboratories has developed a continuous process for the production of casein fiber for making brushes. One commercial firm has decided to manufacture casein bristle according to the continuous method developed in the laboratory. It has constructed a factory building for this work and plans to start trial runs as soon as equipment can be installed.

Rutin from Buckwheat

Chemists in the Eastern Laboratory appear to be on the verge of making a hero out of the lowly buckwheat plant. Buckwheat is being used to produce a drug called rutin, which is extracted from the leaves and blossoms of the green plant. Rutin gives promise of being beneficial in treating persons who are suffering from high blood pressure associated with increased capillary fragility. The results of clinical tests thus far indicate that rutin helps to strengthen the weak capillaries. During the last 30 months more than 1,200 cases have been studied by research men at the University of Pennsylvania Medical School and its affiliated hospital. About 20 percent of the patients treated with rutin were suffering from fragile capillaries. Of these, 88 percent were restored to normal.

The job of the laboratory scientists is to work out practical and economical methods for extracting rutin on a commercial scale. The clinical work is done by medical people. During the summer of 1945 about 300 pounds were extracted from green buckwheat plants by four large drug manufacturers under the technical guidance of chemical engineers from the Philadelphia Laboratory. The quantity will be much larger this year. As the plant is cut green, it is possible to get two and in some instances three crops of buckwheat in one season when it is used for rutin. By a rough estimate, it will require about 10,000 pounds of rutin to meet the experimental demand for the drug this year, and more than a million pounds a year to meet medicinal requirements should the present promising results be substantiated and the drug be placed on the open market. This would mean that about 50,000 acres of buckwheat would be needed each year for its production.

Strange Fibers

Easterners may be surprised to learn that the scientists at the Western Laboratory are trying to find a market for chicken feathers. Feathers—like wool, hair, hoofs, and horns—are composed largely of a fibrous protein called keratin. Around 175 million pounds of chicken feathers are wasted each year. Fundamental research looking toward the industrial utilization of at least a part of this material has led to the production, on a pilot-plant scale, of keratin or chicken-feather fiber. The wet strength of this new fiber is still too low for practical purposes, but the chemists hope to solve that phase eventually. Wet strength has always been a problem in the production of synthetic fibers.

Gain & Loss

Diligence increaseth the fruit of toil. A dilatory man wrestles with losses.

—Hesiod

Laboratory scientists are at work on an artificial textile fiber that appears to be suitable for blending with rayon, cotton, and wool for knitting yarns and woven fabrics. It is called zein and is being produced experimentally in the Northern Laboratory. The finished fiber has a rich creamy appearance. Its dry strength is equal to that of wool, but the wet strength is only about half of the dry strength, so there is need for more research. The fibers are not damaged by washing with soap solutions. This is a protein fiber made from the gluten of corn. It is believed that the spinning and finishing of zein fibers can be made continuous which will be a decided advantage over the batch method of production. One commercial company is getting ready for research on a pilot-plant scale on the production of this new fiber, and the textile industry generally appears to be interested in the product.

Research in the Southern laboratory has resulted in the production on an experimental scale of a peanut-protein fiber now named Sarelon. It has a light cream color, and a soft pleasant feel about midway between silk and wool. It takes dyes similar to those used on silk and wool, and shrinks very little in hot water. In its heat-insulating and moisture-absorbing properties it resembles wool. It may be used alone or mixed with cotton or wool fibers. Its major weakness is its low wet strength, but efforts are being made to improve this property.

It should be borne in mind, of course, that these synthetic fibers, now being produced on an experimental scale in the four Research Laboratories, are being developed not to replace cotton, wool, or other natural fibers, but in the hope of strengthening the natural fibers. The scientists hope to improve textile materials by combining the special properties of the new synthetics with the proven qualities of the natural fibers.

For the Table

Investigations at these Laboratories are not confined to industrial outlets for agricultural commodities. The scientists work on any program that gives promise of expanding or increasing the outlets for farm products. This calls for some research in the food field, and the California Laboratory has made some worthwhile contributions to that part of the utilization program.

Velva Fruit, an ice-cream-like product that can be made from fully ripened fruit, which is often too soft for shipment, is an example of a new outlet in this field. Several hundred thousand gallons of this dessert were sold on the commercial market in 1945 as a result of research.

The Western Laboratory has developed new food products in which modified pectin is used like gelatin or starch in powdered mixtures for preparing a jelly-like dessert. These new products can be made without cooking or hot water. Scientists developed a ready-to-use low-sugar jellied fruit salad or dessert, sterilized by heat and preserved in tin cans. During the war more than 20 million cans were packed commercially for use in Army field rations.

Pilot-Plant Research

Not all of the achievements can be mentioned here. It is easy to be too enthusiastic about the laboratory possibilities but one-third of the space in each of the laboratories is devoted to what is known as pilot-plant research. That kind of research carries promising results on beyond the test-tube stage into what is sometimes termed semicommercial production, where cost figures and data can be obtained on a broader scale.

The need for the type of research that is being done in these four laboratories may be greater tomorrow than ever before because farmers eventually must face the tremendous problem of adjusting expanded wartime production to peacetime demands. This is particularly true in sections where large acreages have been devoted to war crops. New outlets or even a slight expansion of present outlets for some of these commodities might aid materially in the conversion program when it comes.

Action Programs To Improve Nutrition

By ROBERT H. SHIELDS. *The nutritional well-being of this Nation has long been a major concern of the Department. For more than 50 years it has carried on research in nutrition and it has done a great deal of educational work to spread knowledge of the principles of good diet, Mr. Shields reminds us. Here he describes action programs that are aimed directly toward results.*

ACTION PROGRAMS by the Department of Agriculture have brought improved nutrition directly to those who need it most. This is as it should be. To my mind, raising the national nutritional level is of prime importance to every farmer in the land. For him, it is both a responsibility and an opportunity. It is a responsibility because feeding the American people is the farmer's job. It is an opportunity because better standards of diet mean greater demand for farm products and more money in the farmer's pocket.

Today, many phases of our National Farm Program reflect the interest of the Department in improved nutrition. In the first place, it is an important consideration in setting farm production goals. A well-balanced supply of food in the country leads to well-balanced meals on your table and mine. Setting yearly goals in advance, with correlated price-support programs, helps to prevent a lop-sided food supply that would not protect the Nation nutritionally.

Producing plenty of the right foods is only part of the job. This food must be well distributed to all levels of the population. And people must know how to plan meals wisely so as to include all the necessary food elements in their daily diet.

Here is a brief summary of the so-called action programs through which we are now able to promote better nutrition directly. It so happens that most of the programs in this group are administered by the Production and Marketing Administration.

The School Lunch program is familiar to millions. It strikes rather close to the heart of our national nutrition problem. The physical condition of our young people, as revealed by examinations for the armed services, is convincing proof that many of them are not properly nourished. We can be certain that work among children is one of the surest ways of raising nutritional levels in the America of tomorrow.

Every day in a child's life is important in terms of growth. Every missed or inadequate meal means that poorer body structure is formed. Teachers and parents have found, too, that when a child is well-nourished he is more responsive to education. He is more interested and attentive and presents fewer disciplinary problems. In addition, well-balanced meals at school help to fix the patterns of good diet in a child's mind. They encourage him to form good eating habits that will help him to health throughout his life. Every child who eats nutritious lunches at school will be a potentially better citizen in after years.

School Lunches Permanent

Born of the depression, Federal aid for school lunches has continued and expanded for 11 years because of the widespread recognition of its worth. With the enactment last spring of the National School Lunch Act, Congress has put this work on a permanent basis for the first time. The programs will no longer be dependent upon annual authorizations. This constructive action by Congress opens the door for better long-range planning for the programs, and for expansion of Federal-State cooperation to safeguard the health of our children and at the same time provide wider outlets for farm production. Incidentally, we were able to announce recently that all 48 States, the District of Columbia, and the territories have now signed the agreements under which the lunch programs can go forward.

Direct Distribution

Tying in closely with the School Lunch Program is the Direct Distribution Program. Through it, the Department distributes fresh fruits and vegetables and other foods purchased as part of its price-support plan. These commodities are turned over to schools for use in the lunch program, or sent to institutions or welfare recipients. This diversion has a stabilizing effect on market prices at times of peak production and serves to improve the diet of our school children and the people in our benevolent institutions.

Saving Food

Then there is the Department's Home Food Preservation Program, which has been instrumental in establishing more than 6 thousand community canning centers. Through these centers, local surplus foods are saved for family and school-lunch use. These make a great contribution to nutritional well-being, for the canning centers help keep fruits and vegetables on the Nation's table the year round. They prevent food waste in peak production seasons. And they provide a means for canning commodities bought by the Department of Agriculture under the Direct Purchase Program.

The Industrial Feeding Program also is aimed at raising the nutritional level and increasing food consumption. It was started during the war, when the need for maintaining the health and efficiency of industrial workers was keenly felt. It provides technical and informational services to industrial feeding facilities. Thus it helps to improve the diet and health of a segment of the population that is often found to be badly nourished. At the same time, an important market is developed for plentiful and surplus food.

There is a special program designed to stimulate increased movement of agricultural commodities through normal trade channels at times of peak production, known as the Abundant Foods Marketing Program. Its work is accomplished partly through personal contacts with the food trade associations and other interested groups. It uses all methods of information, education, and trade promotion available to the Department.

Through all these means, attention is focused on agricultural commodities that are in heavy supply. All groups and persons involved work together to keep abundant products flowing smoothly to market and to increase consumption. The consumers' attention is called to these nutritional bargains and to the food values gained by buying when they are abundant. Publicity used in the campaign also stresses proper cooking methods to preserve the best nutritive value of the food.

Coordinating Program

The National Nutrition Program is a continuation of the defense and war program designed to extend the knowledge and practice of good nutrition. It is a coordinating program, providing machinery through which all agencies in the field of nutrition can bring their educational and other resources in line with a common objective. Through cooperation, it works to raise the nutritional level throughout the country and to make the best use of the available food supply.

These are some of the ways in which the Department is fostering a more even distribution of food products and better nutrition in our country. They are programs that have been developed through years of depression, war, and famine. Now we are emerging into a new and different period.

Examine and Evaluate

There has been a great demand for all the farm products this country could raise in the recent past. But now farmers in war-torn areas are bringing their land back into production and the situation in regard to food demand will soon be materially changed. Obviously the time may come when we can't find export outlets for the same quantity of food that has been going abroad in the last few years. The time may come, too, when domestic buying power will not be so high as now. Many families who can provide themselves with balanced diets in good times can't do so when prosperity goes around the corner.

As we contemplate our probable future production and distribution problems, it is necessary to examine our present programs closely and evaluate them objectively. How well are they meeting present needs? How can they be improved and made to contribute more to the general welfare? How can they be kept flexible, capable of changing quickly with changing times?

We are constantly working with these problems. The School Lunch Program has been placed on a more sound and permanent basis, assuring continuing Federal assistance with school lunches. Some 7 million school children benefited from the program during last fiscal year, and more can be included this year. New features are being added, such as the dry skim milk program started on a trial basis last fall. Sixteen schools in areas where fresh milk is not available for children's lunches received dry skim milk to serve as a beverage and to use in cooking. If this program is a success, its blessings might well be extended and could result in a very significant gain because in several States fluid milk is still lacking in 40 percent of the school lunches.

In Addition

Besides improvement in existing programs, it may be necessary for us to consider the advisability of some such program as the prewar Food Stamp Plan to bring better nutrition to low-income groups—especially if consumer income drops to lower levels. The outlet for food products would be greatly increased if low-income people were able to buy enough of the kinds and qualities of food that make up an adequate diet, and obviously the consumers involved could have better diets.

Proposals have been made for increasing the food consumption of these low-income families. Most of the proposed plans for a national food-distribution program suggest that a minimum level of food consumption be established. Then low-income people would be given assistance that would enable them to raise their consumption to that level. The lower the participant's income the greater the purchasing power supplement.

Whether any of these proposed programs are authorized will undoubtedly depend primarily on economic developments. If in the future we have any serious unemployment, with its accompanying sharp drop in consumer income, it is certain that the possibilities of such programs will be studied carefully. If farm surpluses begin to pile up again, it would be advisable to try to increase distribution and consumption before, for the long pull, resorting to any necessary production adjustments. As long as there are hungry people in our country, the way should be kept open for farmers to continue producing the kinds of food needed for a good national diet.

Experience we have gained through the development and administration of these action programs gives us a great advantage. We know more about getting food to needy people than we did 10 or 15 years ago, and we have a fuller realization of the need to protect both the nutrition of our consumers and the market outlets of our farmers.

Men change with the growth of custom and the evolution of their own man-made institutions. The evidence is all about us. Even during this war of survival our Nation has fostered a growing social consciousness based firmly on a more widespread recognition of human values.

—Frances Perkins

TOWARD A World Food Program

By HENRY JARRETT. *FAO's Copenhagen Conference and the Preparatory Commission Meeting which followed in Washington are two steps along the road toward that program, said the author, when he sent this requested report to our readers.*

COPENHAGEN, where the Food and Agriculture Organization Conference met in September, is a hard place to leave in more ways than one. The city has an air of lived-in solidity and an unhurried pace, and its people show an easy-going friendliness. Visitors want to keep putting off their departure for just a couple of days more. Besides, Copenhagen, at least during the early fall of this year, seemed to be a blank spot on the map for west-bound world travel. Even when you had made up your mind to leave, you usually still had to whistle for a plane or ship to leave in.

So for one reason or another, the last of the people returning to North America from the Conference did not straggle home many days before delegates to the Preparatory Commission on a long-range world food program began arriving in Washington.

It was not just the accident of a global traffic jam that connected the two meetings so closely. Both are links in the same chain. In fact, now that the Preparatory Commission has begun its work, it is no longer easy to look back on the Copenhagen Conference as an event complete in itself. The meeting was fruitful on several counts, but already it is earmarked as the Conference that at least started toward doing something definite about the old problem of surpluses and shortages of food and agricultural products.

When the Conference opened there was a general feeling among member governments that something ought to be done to solve the long-standing riddle and Sir John Orr, FAO Director-General, had submitted his recommendations as to how the problem might be attacked. That was about all. By the time the Conference closed the 47 member countries had decided international action was needed, had agreed upon the objectives to be sought, and had established a preparatory commission to draft a working blueprint of a long-range program for reaching those objectives.

The Conference opened on a day of cold, drenching rain, just after the face of the Danish Parliament building had been decked out with the flags of FAO's 42 member nations. (The total membership had been raised to 47 before the meetings closed.) This trick of weather was the only real flaw in the setting of the Conference. Otherwise the arrangements and background of the sessions were all that could be asked. The Parliament quarters in the Christiansborg Castle, provided ample space, along with an air of grave elegance, for both full-dress sessions and committee work. FAO's Danish hosts were friendly and helpful. Evenings that could be spared from work were well filled up with official or unofficial entertainment for delegates and staffs. The city's food was a special topic of conversation. It not only was good but—at least in most hotels and restaurants—so plentiful as to amaze visitors from even well-fed countries like the United States. All of these are small matters if you like, but as long as delegates are human beings, they will have a lot to do with the way a conference runs.

Deeper Implications

The setting of the Conference had some deeper implications as well. It was the first meeting in Europe of an organization with many European members. The location gave people from other parts of the world a chance to get the feel of an area recently occupied by the Nazis and to sense the apprehension that there may be another war. On this side of the ocean the idea of what another war would be like is real, but largely mental. There, the fear of another war is a matter of heart and stomach as well as head. The feeling is stronger there that the world is on the edge of a precipice unless the nations act together promptly and constructively.

Another point that becomes a lot sharper when you live with it instead of just read about it, is the way world finance affects practically all phases of living. Denmark has plenty of food, while many other countries, including some within a rocket's range, are hungry. The Danes in turn, want many other kinds of products, and need markets for their food so they can buy them. The intricate workings of international exchange are standing in the way. The situation was an object lesson to anyone who might believe that problems of food and agriculture can be attacked as separate in themselves.

Meaning for World

King Christian X of Denmark formally opened the Conference on the morning of September 2. Henrik de Kauffmann, Danish Minister to the United States, was elected permanent chairman, and the delegates settled down to work. They covered a lot of ground, even aside from work on a long-range program. The Conference was the first since FAO was organized at Quebec, so it had the job of reviewing the Organization's first year of work and checking on its plans for the next year. Some of this work was too technical to try to unravel here; some was pure routine. But there were actions with a great deal of present-day meaning for agriculture and the rest of the modern world.

For instance, the Conference took up the preliminary report of the FAO mission that a few months ago made a broad study of agriculture, fisheries, and forestry in Greece, and recommended a long-range program of development. This kind of study is one of the jobs FAO was especially set up to do, and the Greek

Government was the first to ask for that kind of technical assistance. The Conference studied the preliminary report carefully and asked the Director-General to consider how similar technical services might be made available to other nations requesting it during the coming year. The Conference asked FAO to keep on making appraisals of the world food situation at least annually, and to undertake a broad study of supplies and requirements of fibers and perhaps other nonfood products, along the lines of the thorough World Food Survey issued last summer. In view of the present world shortage of wood, the Conference recommended that a mission be sent promptly to the chief forest regions of Latin America as an aid in developing resources that are not now being exploited. Five new countries—Hungary, Ireland, Italy, Portugal, and Switzerland—were admitted as FAO members. Those were just some of the actions that may be far-reaching.

Long-Range Program

But the unmistakable center of interest at Copenhagen was the long-range program. That is what most of the chief delegates and many of their aides came prepared to talk and act about. They were an outstanding group. Seventeen cabinet members and a half-dozen of sub-cabinet rank were there, along with a distinguished group of scientists, economists, legislators, and government administrators. The United States set a delegation of 27, with N. E. Dodd, Under Secretary of Agriculture, as chief representative, and L. A. Wheeler, of OFAR, as alternate; U. S. Senators Elmer Thomas and Raymond K. Willis, and Representative Clifford Hope were there as Congressional advisors; and the four major national farm organizations were represented. Hazel Stiebeling, Lyle Watts, and Oris Wells were there, along with other experts from Agriculture, and other Government departments.

Sir John's Proposal

The starting point of the discussion was a report by Sir John Orr, "Proposals for a World Food Board." He had prepared the report at the request of the Special Meeting on Urgent Food Problems which met in Washington last May. That meeting, although it dealt chiefly with problems of emergency food shortages, had noted that even in a time of world scarcity, farmers in many countries were already worrying over the return of the same kind of unmarketable surpluses that plagued them before the war. The FAO Director-General was asked to study the problem and recommend ways of dealing with it.

His report showed a belief that the problem, tough as it is, can be mastered. There was just one reason for this optimism—the great need for more food and other farm products than the world ever has produced. FAO's recent World Food Survey had indicated that even before the war, in a period now looked back to as a time of plenty, about half the people of the world were seriously undernourished, and only a third had really enough to eat.

With these unfilled wants in mind, Sir John went at the "surplus" problem as one of getting the world's great agricultural production to the people who need it. The way to ac-

Endeavor

One has never the right to renounce action, or at any rate to renounce attempted action. No action is ever completely lost even if it does not succeed all at once.

—Paul Van Zeeland

complish this, his report said, is to increase purchasing power of people who now cannot buy all the food and other farm products they need. This in turn would call for raising productivity in both industry and agriculture, especially in the less developed areas of the world. An effort of that kind, he pointed out, requires the broadest kind of cooperation, among national governments as well as international organizations such as the International Bank, the proposed International Trade Organization, and others.

To round out this broad program, he suggested creation of a World Food Board that would aim at stabilizing agricultural prices on the world market and at increasing consumption. The kind of Board he recommended would hold stocks of important nonperishable commodities, buying into its stocks when world prices fell below an agreed-upon bottom level, and selling when the price passed a top level. Thus the proposed Board would seek to stabilize world prices within a certain range, and establish a world food reserve against emergencies. The Board would have the power to dispose of surpluses on special terms to nations needing them but unable to buy at going prices. Finally, the Board would work closely with international agencies concerned with credits for agricultural and industrial development, and with trade and commercial policy.

Sir John formally presented his report on the third day of the Conference. He was all earnestness as he took the speaker's platform and surveyed the delegates from under his bushy white eyebrows. He told them that the two great problems—hunger and the increasing power of farm production—should cancel each other out. "But", he said, "they can cancel out only through an international agency which can deal with food problems as a whole." Such an approach "would bring prosperity to an expanding agriculture and an extended world market for industrial products."

Response

For the next 2 days major figures at the Conference spoke in response to the Director-General's proposals. All supported the general objectives; there was a wider range of opinion on some of the suggested details and as to the best methods for carrying the idea further.

Speaking for the United States Mr. Dodd said this: "In the United States, food production was increased by one-third during the war, and that same high level of production is being maintained still to help relieve world food shortages. . . . As labor becomes more plentiful and fertilizers are increased, farmers in the United States will be able to make further increases in crop production. When that time comes, the period of the food relief emergency is almost certain to be passed. Farmers of the United States and of many other parts of the world may then have great difficulty in finding adequate markets. . . . I do not believe that it is necessary for farmers again to undergo such difficulties. . . . I believe . . . farmers generally can have fair prices and the world can have better nutrition, but we will have to devise better methods than we have in the past to make it possible. We are therefore strongly in favor of the general objectives laid down by Sir John Orr."

The Conference turned the report over to a special committee, headed by Herbert Broadley of the British Ministry of Food, who presided over the large and highly articulate group with great skill enlivened by occasional flashes of dry wit. Within 3 or 4 days the committee had agreed on its basic beliefs and (what sometimes is just as important at a conference) the words to express them.

Objectives Approved

On the last day, September 13, the whole Conference approved the objectives of the Director-General's proposals, which the Committee has defined as "(a) developing and organizing production, distribution and utilization of the basic foods to provide diets on a health standard for the peoples of all countries; and (b) stabilizing agricultural prices at levels fair to producers and consumers alike." The Conference then established a Preparatory Commission to work out details of a program. Contrary to a fairly widespread belief, the Conference did not approve, or in fact pass any opinion on, the suggested provisions of the food board plan. But it did instruct the Commission to study the Director-General's proposals, along with any other relevant material.

Alternative Proposals

The meeting of the Preparatory Commission in Washington that opened in October is the result. As expected, the representatives of the several nations advanced several alternative proposals as to how the objectives agreed upon at Copenhagen could best be achieved. Under Secretary Dodd, for example, indicated that the United States believed the American proposals for an International Trade Organization could best serve as a starting point for the Commission's discussion of work. These proposals call for a general reduction in world trade barriers, and they make allowance for the use of commodity agreements under certain circumstances. The British delegate indicated that his Govern-

---

Again

The way must be peaceful, generous, just—a way which if followed the world will forever applaud.

—Abraham Lincoln

ment was interested in stable prices and reserve or buffer stocks, but that a commodity-by-commodity approach might be most desirable.

The Commission is charged with considering Sir John's original proposal and feasible alternatives. But the thing to remember is that after all these materials have been studied, the primary task of the Commission is to work out definite recommendations as to how objectives agreed upon at Copenhagen can be achieved. It will report back to the FAO Director-General, who will in turn submit the report to FAO member governments and international organizations represented on the Commission, and then call a full conference of FAO to consider such specific proposal or proposals as may be advanced. Any final scheme or programs, however, will have to be considered by the United Nations, before coming into actual operation, and must be ratified by the several Governments concerned.

* * * * *

As John Orr sees it, even more is at stake than better diets for the world's consumers and more prosperity for its food and agriculture producers. "The center of interest now passes from this Conference to the Preparatory Commission", he said as the Copenhagen meeting closed. "Things are not going well in international affairs. Already the fear of another war casts its shadow on mankind. But there must be no war, and if the nations cooperate on a world food plan based on human needs, there will be no war. We are racing against time."

Destiny

I think it not improbable that man, like the grub that prepares a chamber for the winged thing it never has seen but is to be—that man may have cosmic destinies he does not understand. And so beyond the vision of battling races and an impoverished earth, I catch a dreaming glimpse of peace.

—Oliver Wendell Holmes

Yearbooks of Agriculture: 100 Years of Tradition

By ALFRED STEFFERUD. *In this brief article, the editor of the forth-coming Yearbook of Agriculture 1943–1947, the first Yearbook since 1942, notes a few items about it and its predecessors.*

SOME DAY, I hope, there will be a Yearbook of Agriculture about the Yearbooks of Agriculture. The idea might sound like one that would yield only a tour de force, but it actually could be a significant, unique history of American farming. One of the contributors to it should be Philip Wagner, editor of The Baltimore Evening Sun, a collector of old Yearbooks who reads and loves them, and a man of trenchant thought and word.

The point comes up now in connection with the forthcoming Yearbook of Agriculture 1943–1947, named *Science in Farming.* It is the first volume since 1942, and it could be called the 50th Anniversary Yearbook or the 100th Anniversary Yearbook, depending on the way one reads history. Besides, the coming book describes many of the developments in agricultural research of the war years and is therefore more closely related to the old Yearbooks than the series of books, each devoted to a single broad subject, which Gove Hambidge and Henry A. Wallace began in 1936 and which will be the pattern of the books after this one.

The first Yearbook to be labeled so was issued in 1895—an imperfect representative, Assistant Secretary Charles W. Dabney, Jr., said then, "of the ideal of what such a Yearbook should be," but nevertheless a welcome innovation from the previous annual administrative reports that had included, "perhaps unavoidably, discussion of the investigations carried on in the Department."

Some persons consider the first Yearbook the one published in 1863, the year after Congress passed and Abraham Lincoln signed a bill authorizing the establishment of the Department. But even before that the boys in a back room of the Patent Office coped with the few problems of the nascent American agriculture and the Commissioner of Patents annually asked "the warm friends of agriculture and practical husbandmen in different parts of the country" for information on "the aspect, progress and success of the crops in the various sections of the land where they lived." The friends and husbandmen sweat over their assignments during the long winter evenings and produced the copy for the aboriginal Yearbooks.

Among them, for example, was H. Ancrum of Pike County, Missouri: "The object of this paper is to prove that wool mattresses make the healthiest, the warmest, the most luxurious, the cheapest and the most economical bed that can be made, and that it is superior to any other material for a bed for men, women and children, for all ages and sexes, and that man recovers much sooner from fatigue on such a bed than on any other."

About 100,000 copies of the 1847 Yearbook, for which Mr. Ancrum wrote, were printed; about 250,000 copies of the latter-day Yearbooks are printed as a congressional document.

"Not Yet Routinized"

Mr. Wagner, the collector, first awoke to the "singular fascination" of these volumes (he said in a review of the 1940 Yearbook) when he happened onto the volume for 1847 in a second-hand store:

"In those early years the writing of Yearbooks had not yet been bureaucratized and routinized. . . . These volumes suggest, as no formal history can hope to do the quality of the American mind in the expanding years of the early nineteenth century, when we had a great country, knew in our bones that it *was* a great country, and weren't yet at all sure in which directions its greatness lay. Agricultural ideas, good ideas, bad ideas, glowing ideas, flew off in a hundred directions, as particles thrown out by a centrifuge."

About some later volumes, Mr. Wagner lost his enthusiasm, and his words merit thought:

"But as I gathered more of them I found that the quality of the later volumes failed to bear out the promise of the earlier ones. For as the Department of Agriculture gathered wealth, power and momentum, this business of producing an annual volume on the state of husbandry in the United States got itself into a groove. The task became mechanized and routinized. . . .

"Then, at the end of the year 1936, there appeared one of the few achievements of the New Deal about whose excellence there has been no controversy whatsoever. . . . The Yearbook of 1936 was a brilliant achievement and the preparation of it was like a fresh wind blowing through the halls of the department building in Washington. It was the great opportunity for some hundreds of genuine investigators—horticulturists, bug men, geneticists—who had been languishing in frustration since their conquest by the agricultural economists, the grow-less men in the early days of the depression. . . ."

The Coming Book

As a friend who has the right to be a critic, Mr. Wagner has a good deal more to say about Yearbooks. I cannot copy it all here, except (lest I be accused of devilishly quoting scripture for my purpose) I must mention that Mr. Wagner found the 1940 book a headache.

Views like his must be taken seriously; every editor—even the editors of a volume that ranks as a best seller and may be called the biggest publishing venture of its kind in the world—must give sober thought to making a book that is useful, practical, interesting, and attractive to as many readers as possible.

In this new book we have 150-odd authors, each of whom has been told to write as he wants to write, not the way he thinks vaguely his superiors want him to write. He should write as he would like to be written to before he acquired his present knowledge of the subject; their articles must not sound as if they came out of a single mould or were subjected to a "readability" scale that assigns good and bad points to the number of personal pronouns or passive verbs, or big words they contain.

We have been conscious, too, that the 250,000-odd copies of the Yearbook are read by all kinds and conditions of men—farmers, mostly, who are wonderfully quick to spot the specious and the spurious in a subject that so vitally concerns them and about which they know so very much.

There are city folk, too, among Yearbook readers, like Mr. Wagner, and college students, county agents, Extension workers, gardeners, market men, housewives—as diverse a group as any man wrote or edited for, and a group so eager that they have taken all the past Yearbooks out of print.

Practical and Useful

We should have a book this year that contains good, practical, useful information for many people—almost ("almost" because the book takes about 6 months just to go through the presses) the last word on the methods of agricultural research, animal nutrition and diseases, cross-breeding of dairy cattle, plant genetics, growth regulators, nutrient balances, anthracnoses, sorghums, corn, hybrids, trees, photoperiodism, fertilizers, bees, irrigation, DDT and its successors, egg cooling, rutin, Velva Fruit, work clothing, mildew, and many another important development from test tube, pilot plant, and test plot. The articles are grouped into several major sections: Backgrounds, animals, plants, soils, forests, insects, engineering and techniques, new products and uses, the home, and meanings.

Besides articles by technicians in Washington and Beltsville, and in colleges, experiment stations, and laboratories in all parts of the country, the Secretary of Agriculture has written an introductory foreword on the importance of the subject matter, and W. V. Lambert, administrator of the Agricultural Research Administration, has a concluding article on the future of research. In it he calls for greater attention to conservation and utilization of our resources and products, besides a number of points specified in the new Research and Marketing Act of 1946 which appropriates a substantial amount of money for further research.

All in all, it's a big tradition to live up to.

◆

The Substances of what we think
Tho' born in THOUGHT, *must live in* INK.

—Early Williamsburg Publication

Books

INTERNATIONAL ECONOMIC CO-OPERATION. By *J. TINBERGEN,* Elsevier, Amsterdam; New York. 1945. 208 pages.

THIS BOOK of the well-known Dutch economist, who formerly was attached to the Secretariat of the League of Nations, discusses theoretical problems of the international economy and then develops proposals for international economic cooperation.

As a basis for his theoretical analysis, the author takes the fact that—even in the absence of specific government intervention—many obstacles often delay adjustment to changing conditions. Thus they limit the operation of competitive forces in the international economy. While he considers these forces the best means of achieving an optional division of labor (and hence the highest total production) under conditions of full employment, he advocates protectionistic measures when there is need for breaking a vicious cycle of depression and bringing about structural changes in the economy. He does not overlook, however, that protection is also used widely to make possible continued uneconomic production, and that it is difficult to decide when protection serves the one and when the other purpose. In conformity with this general philosophy, he advocates interference also in the monetary system, as in particular exchange-rate changes (in preference to wage-rate reductions) in the typical cases of a balance-of-payment disequilibrium.

The author calls for a concrete program of regulating international economic relations. Besides issues meanwhile settled, such as lend-lease or the establishment of international financial agencies, he discusses some problems that deserve considerable attention, as for instance the question of curtailing the sovereign power of nations in the fields of commercial policy and international payments. He favors such curtailment in general, and in particular regarding the trade in certain raw products where national intervention has become widespread "but from an international point of view is little satisfactory." He pleads for a coordination of the various national trade-cycle policies.

He is greatly concerned with the problem of reducing the differences in living standards among the nations. To promote a solution of this problem, he not only strongly advocates international development loans, but he also calls for a redistribution of natural resources. For, he argues, raw-material production is a source of income which should be equally available to all nations. This argument is contrary, however, to the doctrine (to which he professes adherence) of the gain resulting from the international division of labor.

When the author points to the large underdeveloped countries of India and China his suggestion becomes rather unrealistic. What tremendous population movements would be required to give their teeming millions a more equal share in the world's natural resources! How large would be the costs! Then there are the social and political disturbances and tensions that would be an unavoidable consequence of uprooting and resettling so many millions of people. But most of all, how unnecessary is such a scheme in modern times, when education and technical development make possible high living standards even for densely populated countries, as demonstrated by the case of the Netherlands, his own native country, whose "land hunger" he emphasizes. Especially if we believe in a world economy, as Dr. Tinbergen says he does, we have to seek the solution of the world's problems not in upsetting schemes of a Hitlerian type but in world trade and world economic cooperation.

—*Oscar Zaglits*

It Happened in Taos. By *J. T. REID.* The University of New Mexico Press. Albuquerque. 118 pages.

IT DID HAPPEN in Taos! If you are interested in soil conservation, if you are interested in livestock improvement, in the school lunch, in greener pastures, in better tax collection, in a functioning rural church, in irrigation, in rural health, in the people's artistry, in library service, in better rural schools—it all happened in Taos. If you are concerned about improvement of human living the world over, here is the story of how it can be done, of how the people can do it. This is the story of a demonstration. It is in itself a pattern and a philosophy.

Taos is a county in northern New Mexico. The Sangre de Cristo Range, a spur of the Rockies, towers above the villages in the mile-high valley and the dry table lands. It shares in the fascinating history of the Southwest and in the rich traditions. Its people, most of whom have lived for generations amid its beauty and ruggedness, reflect the pressures of their immediate environment. They are "philosophical, patient to a point of fault, kindly, tolerant and deeply religious." But steeped in defeatism. Their economic plight was serious when the demonstration was begun.

Their problems were not new. They were an accumulation of generations of living, the same kind that plagued mankind everywhere. But in Taos County something happened. "Everybody got together on everybody's business." This book tells what happened, why it happened, and how it happened. It is the story of how an underprivileged people can be helped to work together to help themselves to make the most of their natural and personal resources and to use the equipment and services available to them.

In an age when planning is a key word and coordination its ready second, it is stimulating to know of such successful planning by the people themselves, for their own job. Like most American counties Taos had some functioning agencies to serve the people, but their attacks on the problems had been each on its own, and not too fruitful. With patient effort each has been fitted into the picture, and through effort coordinated by the people themselves, each is now giving apparently a maximum technical and scienific service.

How can people be helped to help themselves? The American Association for Adult Education and the Carnegie Corporation provided the spark. To them it was an experiment in the possibilities of county planning. The State University assumed educational leadership and 36 agencies put in their offerings. The people were led to see and feel their own power, and to use it.

ALL OVER our country there are counties with like problems. The people of Taos County have demonstrated that something can be done about them. They have shown that a people's plan, built around their own resources and adjusted to their own backgrounds, can lead to action that will change habits and improve human living. This story indicates the soundness of county planning and of coordinated agency projects. With this demonstration as a pattern other counties—east, west, south, or north—might well step out and attack their accumulations of problems.

IN THE WORLD-WIDE struggle to improve human living we need this pattern too. Over-all planning by the United Nations, coordination in the many areas of living—economic, nutritional, educational, social, and cultural—are needed to make way for achievement. But the real achievement lies in the hands of the people. It is their effort which will bring improvement. In the small governmental units of each Nation the people can be helped to understand and use our widespread knowledge to lift themselves out of deprivation and despair. And they only can do it. Through picture and text Dr. Reid tells us how.

—*Lydia Ann Lynde*

* * *

There is a history in all men's lives
Figuring the nature of the times deceas'd;
The which observ'd, a man may prophesy.

—Shakespeare

* * *

ECONOMIC GEOGRAPHY OF CANADA. By *A. W. CURRIE.* The Macmillan Company of Canada Limited. Toronto, Canada. 455 pages.

"ECONOMIC GEOGRAPHY of Canada" is the first true geography of that country ever published. In its preparation, Currie has drawn upon the large mass of geographic and economic literature that has been published in recent years, largely in the form of articles in technical journals and reports prepared for the national and provincial governments. The resulting volume is clear, well organized, and authoritative.

Canada is divided into seven geographic regions — the Acadian-Appalachian Region, the St. Lawrence Lowlands, the Prairie Region, the Cordilleran Region, the Canadian Shield, the Mackenzie Valley and Hudson Bay Lowlands, and the Tundra, with an additional chapter devoted to Newfoundland and Labrador. Each region is discussed according to its topography, climate, agriculture forestry, mining, manufacturing, and developed and potential hydroelectric power. Crops, soils, methods of farming, land tenure, and the agricultural futures of the regions receive far more attention than is usual in an economic geography, the reason being the outstanding importance of agriculture in Canadian economy. In general the geographic regions delimited by Currie correspond to the physiographic regions of Canada. Only along the boundary of the St. Lawrence Lowlands and the Shield do the economies of the regions overlap to a marked extent.

From the standpoint of agriculture in general, manufacturing, and commerce, the St. Lawrence Lowlands is much the most favored region. In all of the other regions forestry, grazing, fishing, or mining are of greater importance. All are important in the Cordilleran Region because of its great diversity of topography, climate, soils, and natural resources.

THE MANY differing geographic and economic factors influencing the development of all of the regions are well portrayed. To either the trained geographer or the economist, however, the discussions may seem oversimplified. Such criticism is probably inevitable for any book written for a wide range of readers; nowhere does the author indicate any specific group for whom he is writing. But the specialist will find adequate references for topics in which he is particularly interested. Unfortunately, all of the maps are reprints from other publications and do not ideally supplement the text. For example, the map of the physiographic regions of Canada accompanying the introduction does not use the same terminology as the text and shows only approximately the regions discussed. One good map drawn specifically for the text would have improved the book enormously. Nevertheless, in bringing together in a single volume the salient features of all of the regions, Currie has made a definite contribution to Canadian geography.

—*Lois Olson*

MARKETING FARM PRODUCTS. By *GEOFFREY S. SHEPHERD.* The Collegiate Press, Inc. Ames, Iowa. 445 pages.

HERE IS a book which is rather different from the usual run of texts on agricultural marketing. It has a freshness of viewpoint and is distinctly readable. If the reader looks for another characteristic which is outstanding and commendable he will probably find it in Professor Shepherd's view of the evolutionary character of marketing organizations and methods. This involves not only consideration of the past development of marketing, but also an attitude of looking for and welcoming further change.

Generous use has been made of the voluminous material pertaining to marketing prepared by various agencies of the Federal Government, especially the Department of Agriculture. This is as it should be. The charts and tables here reproduced provide a wealth of statistical material relating to the marketing of agricultural products.

The book is divided into three parts: The Physical Production and Distributive Plant; Meeting Fluctuations in Market Prices; and Reducing the Costs of Marketing.

The first part is actually concerned primarily with presenting the economic setting of the problems and processes of marketing. It discusses the demand and supply of farm products and their relation to the marketing system and the price-making process.

The second part deals with prices—cyclic movements, seasonal movements, futures prices and their relation to speculation, price relationships in decentralized markets, negotiated prices, with a final chapter entitled "Grades, Values and Prices." Most of this appeared previously in the author's *Agricultural Price Analysis.*

Reducing the Costs of Marketing is an inappropriate title for Part III since most of the material in this section is a description of the organization and operation of the marketing system. Thus the chapter called Reducing Grain Marketing Costs might better be called simply Grain Marketing. It contains much information about this marketing and there is a discussion of grain-storage problems, including the adequacy of grain-storage supervision. Nowhere, however, does the author address himself to the question of how grain marketing costs can be reduced—or even to the question of whether they can be reduced. It is the impression of the reviewer that the use of the words, "reducing . . . costs," is either the device of a publisher to increase sales or the trick of a journalist to catch the readers' interest. In a book written for an uncritical audience, or as titles to short articles, such devices may prove effective, but here they seem out of place. In any event this Part III provides an excellent example of misbranded merchandise.

The critical reader may wish to quarrel with the author's conception of the field of marketing, for in it he includes not only the general field of agricultural prices but much of what is traditionally considered to be in the field of agricultural production. Thus he says, "The first agricultural marketing problem, therefore, is to determine each year what kinds of food and fiber consumers want . . . farmers need to determine these things each year . . . and lay their production plans accordingly."

The breadth of Professor Shepherd's concept of the field of marketing perhaps explains why he says, "Agricultural production problems are easier to see and easier to deal with than marketing problems."

On another page he states, "In order for a central market price to represent 'the price' of the commodity satisfactorily, . . . the volume of trading at the central market must be large enough to constitute at least a representative sample of the trading in the commodity all over the tributary area . . ." Such a statement regarding a representative sample is sufficient to give a susceptible statistician apoplexy!

An entire chapter is devoted to The Two Parts of the Price-Making Process. These are: "(1) the determination of the value of *the commodity* . . . and (2) the determination of the value of the *particular lot* . . . relative to other lots . . ." This is an oversimplified and misleading dichotomy. First of all, is there any such thing as the value of *the commodity,* wheat? A buyer and a commission may have before them two samples of wheat—the one No. 2 Hard Red Winter, Smutty, the other No. 3 Soft Red Winter, Garlicky. Perhaps the problem of judging the physical quality characteristics (both those accounted for in the official grades and those not so recognized) may well be considered a separate part of determining their value. But determining the relative *value* of those characteristics is no more a separate part of the price-making process than is determining the value of wheat relative to oats.

Many more examples might be cited, but these must suffice to indicate that the book, although it embodies much effective work and is very useful and readable, lacks something of being a well-planned and well-matured piece of work.

—E. *J. Working*

An Index to volumes 8 and 9 of the LAND POLICY REVIEW will be sent on request

U. S. GOVERNMENT PRINTING OFFICE: 1946

It is not enough to yearn for peace. We must work, and if necessary, fight for it. The task of creating a sound international organization is complicated and difficult. Yet, without such organization, the rights of man on earth cannot be protected. Machinery for the just settlement of international differences must be found.

—Harry S. Truman